



31ST ANNUAL RESEARCH DAY

FRIDAY MAY 9, 2014

31st ANNUAL RESEARCH DAY
Friday May 9, 2014

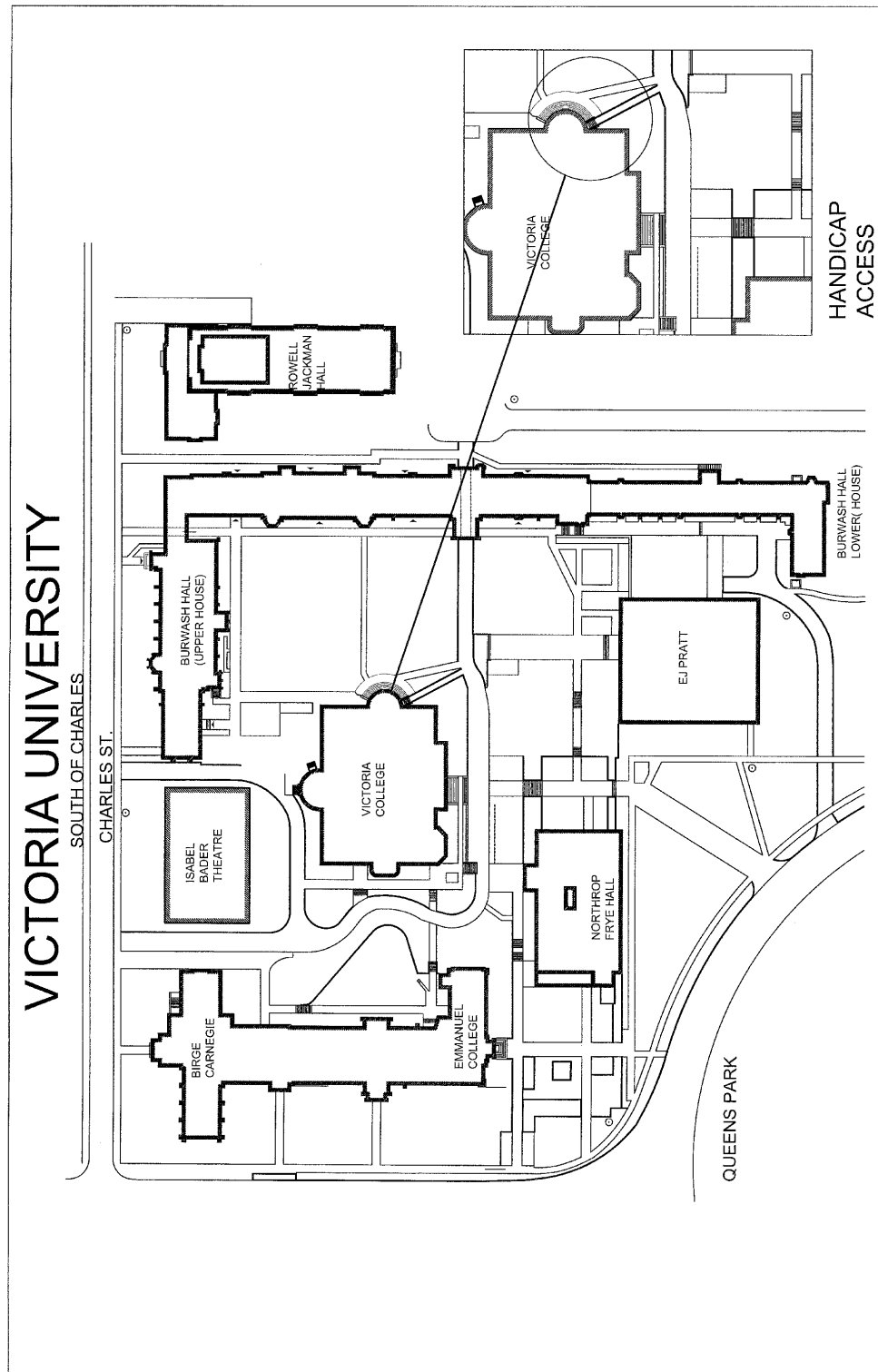
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MAPS

OLD VIC BUILDING

Victoria University, University of Toronto
91 Charles Street West, Toronto, Ontario M5S 1K6



RESEARCH DAY 2014
Northrop Frye Hall, Victoria University, University of Toronto

Friday, May 9, 2014
MORNING

7:30 AM on	Poster Set-up for Presenters (Ground Floor Rms 004, 006, 007; 1 st Floor Rms 113,119)	
8:00 AM	Registration & Continental Breakfast (Ground Floor Foyer)	
8:25 – 8:30 AM	Welcome: Dr. John Kingdom, Chair (Auditorium, Ground Floor Rm 003)	
8:30 – 9:45 AM	Oral Session I (O1-O5) (Auditorium, Ground Floor Rm 003) 5 presentations @15 mins: 10 min presentation + 5 mins for questions Chair/Judge: Dr. Andras Nagy Judges: Drs. Alan Bocking & Ori Nevo NB: <i>All posters are displayed all day.</i>	
9:45 – 10:05 AM	Coffee Break & Poster Session I Walkabout (Ground Floor Rms 004, 006, 007; 1 st Floor Rms 113,119) AM Poster presenters attend their posters and attendees may view at their leisure and ask questions	
10:05 – 11:05 AM	Poster Session I Tour, Groups A-F (Ground Floor Rms 004, 006, 007; 1 st Floor Rms 113,119) 3-5 min presentation + 5 mins for questions	
	Chairs/Judges A Drs. Rachel Spitzer & Abeha Satkunararatnam B Drs. Paul Chang & Navid Esfandiari C Drs. Mark Yudin & Caroline Dunk D Drs. Gareth Seaward & Paul Bernstein E Drs. Andrea Jurisicova & Ian Rogers F Drs. S Lee Adamson & Prati Sharma	Judges Dora Baczyk Dr. Amanda Selk Dr. Andrea Lausman Dr. Richard Pittini Dr. Theodore Brown Dr. Alexandra Kollara
11:10 – 12:10 PM	Oral Session II (O6-O9) (Auditorium, Ground Floor Rm 003) 4 presentations @15 mins: 10 min presentation + 5 mins for questions Chair/Judge: Dr. Kellie Murphy Judge Judges: Drs. Isabella Caniggia & Lilian Gien	

Friday, May 9, 2014
AFTERNOON

- 12:15 – 1:45 PM **Lunch** (Strachan Hall, Trinity College)
- 1:50 – 3:05 PM **Oral Session III (O10-O14)**
(Auditorium, Ground Floor Rm 003)
5 presentations @15 mins: 10 min presentation + 5 mins for questions
Chair/Judge: Dr. Arthur Zaltz
Judges: Drs. Cynthia Maxwell & Carl Laskin
NB: All posters are displayed all day.
- 3:05 – 3:25 PM **Coffee Break & Poster Session II Walkabout**
(Ground Floor Rms 004, 006, 007; 1st Floor Rms113,119)
PM Poster presenters attend their posters and attendees may view at their leisure and ask questions
- 3:25 – 4:25 PM **Poster Session II, Groups G-L**
(Ground Floor Rms 004, 006, 007; 1st Floor Rms113,119)
3-5 min presentation + 5 mins for questions
- | Chairs/Judges | Judges |
|--|--|
| G Drs.. Patricia Lee & Joan Murphy | Dr. Lisa Allen |
| H Drs. Edward Ryan & Alicia Tone | Drs. Yaakov Bentov
(except H6) & Marjorie
Dixon (H6) |
| I Drs. Ellen Greenblatt & Sergey Moskovtsev | Dr. Christine Derzko |
| J Drs. Clifford Librach & Sari Kives | Dr. Janet Bodley |
| K Drs. Howard Berger & Adrian Brown | Dr. Mathew Sermer |
| L Drs. Sarah Ferguson & Noor Ladhani | Dr. Marcus Bernardini |
- 4:25 – 4:30 PM **Poster Takedown**
(Ground Floor Rms 004, 006, 007; 1st Floor Rms113,119)
- 4:30 – 5:30 PM **Henderson Lecture**
(Auditorium, Ground Floor Rm 003)
45 min presentation + 15 mins for questions
Professor Aidan Halligan
University College London Hospitals and UCLP NHS Staff College
“Rediscovering lost values: Leadership in a challenging clinical environment”
Closing Remarks: Dr. John Kingdom
(Auditorium, Ground Floor Rm 003)
- 5:30 – 6:30 PM **Wine and Cheese Reception and JW Knox Ritchie Research Awards Presentations** (1st Floor Rm 119)



PROGRAM

31st ANNUAL RESEARCH DAY Friday May 9, 2014

- 7:30 AM on** **Poster Set-up for Presenters** (Ground Floor Rms 004, 006, 007; 1st Floor Rms 113,119)
- 8:00 AM** **Registration & Continental Breakfast** (Ground Floor Foyer)
- 8:00 AM–
4:30 PM** **COLLABORATION CORNER (Ground Floor Foyer)**
Pilot projects looking for collaborators
- 1 **A GTA based randomized controlled trial (RCT) of induction of labour versus expectant management in patients with gestational diabetes mellitus (GDM) (95)**
Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Nir Melamed, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 2 **Variation in the Perioperative Approach to Gynaecologic Surgery: A Needs Assessment at the University of Toronto (96)**
Lindsay Shirreff, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Lisa Allen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Richard Pittini, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Ally Murji, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Guylaine Lefebvre, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3 **Developing Best Practice Guidelines in OBGYN Departments of the GTA. A Pilot Project: Thromboprophylaxis after Cesarean Delivery (97)**
Julie Nguyen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Adrian Brown, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 4 **AMPATH Reproductive Health - Collaboration Corner (98)**
Rachel Spitzer, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

8:30 AM – 8:45 AM	ORAL SESSION I (Auditorium, Ground Floor Rm 003) 5 presentations @ 15 minutes: 10 minutes for oral presentation + 5 minutes for questions Oral session chair: Dr. Andras Nagy Judge: Dr. Alana Bocking Judge: Dr. Ori Nevo Vitamin B12: dietary intake, supplement use and serum concentrations in a cohort of Canadian pregnant women and in umbilical cord blood (O1)
8:30 AM – 8:45 AM	Shannon Masih , St Michael's Hospital (Canada) Lesley Plumptre, St Michael's Hospital (Canada) Anna Ly, St Michael's Hospital (Canada) Kyoung-Jin Sohn, St Michael's Hospital (Canada) Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Andrea Lausman, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Ruth Croxford, Other (Canada) Deborah O'Connor, Hospital for Sick Children (Canada) Young-In Kim, St Michael's Hospital (Canada)
8:45 AM – 9:00 AM	A pilot study to evaluate a device for the intravaginal culture of embryos (O2) Frederic Mitri , Department of Obstetrics and Gynaecology, University of Toronto (Canada) Navid Esfandiari, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Joan Coogan-Prewer, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Paul Chang, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Yaakov Bentov, Department of Obstetrics and Gynaecology, University of Toronto (Canada) John McNaught, Other (Canada) Anat Herscu-Klement, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Robert Casper, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
9:00 AM – 9:15 AM	Jumonji C domain containing protein 6 (JMJD6) - a novel oxygen sensor in the human placenta (O3) Sruthi Alahari , Department of Obstetrics and Gynaecology, University of Toronto (Canada) Isabella Caniggia, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 9:15 AM – 9:30 AM **Prevalence of obstructive sleep apnea detected by the Berlin questionnaire in patients with nocturia attending a urogynecology (O4)**
Salomon Zebede, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Danny Lovatsis, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 May Alarab, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Harold Drutz, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 9:30 AM – 9:45 AM **The Transfer of Dabigatran and its Pro-drug Across the Dually Perfused Human Placenta – Implications For Therapy In Pregnancy (O5)**
Priya Bapat, Hospital for Sick Children (Canada)
 Reuven Kedar, Hospital for Sick Children (Canada)
 Angelika Lubetsky, Hospital for Sick Children (Canada)
 Katarina Aleksa, Hospital for Sick Children (Canada)
 Gideon Koren, Hospital for Sick Children (Canada)
 Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 9:45 AM – 10:05 AM **Coffee Break & Poster Session I Walkabout Poster Groups A-G**
 (Ground Floor Rms 004, 006, 007; 1st Floor Rms113,119)
- 10:05 AM – 11:05 AM **POSTER SESSION I (AM) Poster Tours (Groups A-G) (Ground Floor Rms 004, 006, 007; 1st Floor Rms113,119)**
 Three Judges (including 2 Co-Chairs), along with the poster presenters, will go around as a group. The poster presenter has 3-5 minutes to present and there will be 5 minutes for questions.
- 10:05 AM – 11:05 AM **POSTER GROUP A (Gynaecology) Poster Session I (am) (Ground Floor, Room 004)**
 Co-chair: Dr. Rachel Spitzer
 Co-chair: Dr. Abheha Satkunaratnam
 Judge: Dora Baczyk
- 10:05 AM – 10:15 AM **What Do Patients Want? A Needs Assessment of Vulvodynia Patients Attending a Vulvar Diseases Clinic. (A1)**
Katherine LePage, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Amanda Selk, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 10:15 AM - **Prevention of reformation of intra uterine adhesions following lysis of adhesions and septoplasty: A retrospective review (A2)**
 10:25 AM **Daniel Margel**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jamie Kroft, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:25 AM - **Treatment of low-risk GTN with biweekly Actinomycin-D (A3)**
 10:35 AM **Ummi Habiba**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Ray Osborne, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Clare Reade, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Lua Eiriksson, Other (Canada)
 Matthew Cesari, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:35 AM - **Female Genital Tract Graft-vs.-Host Disease (GVHD): A Current Retrospective Patient Review (A4)**
 10:45 AM **Adrienne Li**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Wendy Wolfman, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:45 AM - **Follicular Fluid Exosomes and Exosomes Secreted by Granulosa Cells In Vitro: A Potentially Important Mechanism for Intra-Follicular Communication (A5)**
 10:55 AM **Bahar Behrouzi**, Other (Canada)
 Arshia Azizeddin, Other (Canada)
 Prati Sharma, Other (Canada)
 Ari Baratz, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Karen Glass, Other (Canada)
 Shlomit Kenigsberg, Other (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:05 AM – **POSTER GROUP B (Infertility I) Poster Session I (am) (Ground Floor, Rm 004)**
 11:05 AM **Co-chair:** Dr. Paul Chang
Co-Chair: Dr Navid Esfandiari
Judge: Dr. Amanda Selk

- 10:05 AM - **Activity of E3 Ubiquitin Ligase MULE drives Early Oocyte Atresia and Premature Ovarian Failure (B1)**
 10:15 AM **Nicole Zhang**, Department of Physiology, University of Toronto (Canada)
- 10:15 AM - **Nanoparticles are released from human pre-implantation embryos and their short RNA content correlates with embryo morphology (B2)**
 10:25 AM **Parshvi Vyas**, Department of Physiology, University of Toronto (Canada)
 Hanna Balakier, Other (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:25 AM - **Effect of Endometrial Shedding with Medroxyprogesterone Acetate prior to Clomiphene Citrate in Oligo/An-ovulatory Women: a Pilot Study (B3)**
 10:35 AM **Claire Jones**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Kimberley Garbedian, Other (Canada)
 Nurun Chowdhury, Mount Sinai Hospital (Canada)
 Marjorie Dixon, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Heather Shapiro, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:35 AM - **Obesity and Infertility: A Health-Related Classification System, versus Body Mass Index, Better Predicts Pregnancy Rate in Overweight and Obese Women. (B4)**
 10:45 AM **Nicole Paterson**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Ellen Greenblatt, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Cynthia Maxwell, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Arya Sharma, Other (Canada)
- 10:45 AM - **Assisted Reproduction involving Surrogacy: An analysis of the Medical, Psychosocial and Legal Issues from a large Canadian Surrogacy program. (B5)**
 10:55 AM **Tal Lazer**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jan Silverman, Other (Canada)

Cindy Wasser, Other (Canada)
 Sergey Moskovtsev, Department of Obstetrics and Gynaecology,
 University of Toronto (Canada)
 Sonja Swanson, Other (Canada)
 Agata Sojecki, Women's College Hospital (Canada)
 Karen Glass, Other (Canada)
 Prati Sharma, Other (Canada)
 Ari Baratz, Department of Obstetrics and Gynaecology, University of
 Toronto (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University
 of Toronto (Canada)

10:55 AM -
 11:05 AM

**Pregnancy rates in poor-ovarian-response patients undergoing
 conventional IVF treatment supplemented with
 dehydroepiandrosterone and Coenzyme Q10. (B6)**
Sonia Blanco Mejia, Other (Canada)
 Edward Ryan, Department of Obstetrics and Gynaecology, University of
 Toronto (Canada)
 E. Anne Claessens, Department of Obstetrics and Gynaecology,
 University of Toronto (Canada)

10:05 AM -
 11:05 AM

**POSTER GROUP C (Maternal-Fetal Medicine I) Poster Session I
 (am) (Ground Floor, Rm 006)**
 Co-Chair: Dr. Mark Yudin
 Co-Chair: Dr. Caroline Dunk
 Judge: Dr. Andrea Lausman

10:05 AM -
 10:15 AM

Fetal thrombocytopenia following parvovirus-B19 infection (C1)
Nir Melamed, Department of Obstetrics and Gynaecology, University of
 Toronto (Canada)
 Wendy Whittle , Department of Obstetrics and Gynaecology, University
 of Toronto (Canada)
 Ed Kelly, Mount Sinai Hospital (Canada)
 Rory Windrim, Department of Obstetrics and Gynaecology, University of
 Toronto (Canada)
 Gareth Seaward, Department of Obstetrics and Gynaecology, University
 of Toronto (Canada)
 Johannes Keunen, Department of Obstetrics and Gynaecology, University
 of Toronto (Canada)
 Greg Ryan, Department of Obstetrics and Gynaecology, University of
 Toronto (Canada)

- 10:15 AM - **Melatonin mitigates placental vascular resistance and cardiac dysfunction in a rabbit model of intrauterine growth restriction. (C2)**
 10:25 AM **Ryan Hodges**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Andre Miyague, Other (Belgium)
 Masayuki Endoh, Other (Belgium)
 Andre LaGerche, Other (Canada)
 Francesca Russo, Other (Belgium)
 Jan Dhooge, Other (Belgium)
 euan wallace, Other (Australia)
 Jan Deprest, Other (Belgium)
- 10:25 AM - **Twin Birth Study: incidence of caesarean delivery in induction of twin pregnancies (C3)**
 10:35 AM **Elad Mei-Dan**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jon Barrett, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:35 AM - **Heparin Causes Placental Growth And Increased Expression Of Trophoblast Progenitors In Mice; Implications For Preventing Severe Preeclampsia (C4)**
 10:45 AM **Farshad Ghasemi**, Department of Physiology, University of Toronto (Canada)
 John Kingdom, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 S Lee Adamson, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:45 AM - **Astrocyte-Derived Factors Increase Multidrug Resistance via P-glycoprotein at the Developing Blood-Brain Barrier (C5)**
 10:55 AM **Stephanie Baello**, Department of Physiology, University of Toronto (Canada)
 Majid Iqbal, Department of Physiology, University of Toronto (Canada)
 William Gibb, Other (Canada)
 Stephen Matthews, Department of Physiology, University of Toronto (Canada)

- 10:55 AM - **Hypoxia and Drug Transporter Expression in the Placenta and Fetal Liver: Influence of Antioxidants (C6)**
 11:05 AM **Mohsen Javam**, Department of Physiology, University of Toronto (Canada)
 Jason Yung, Department of Physiology, University of Toronto (Canada)
 Stephanie Baello, Department of Physiology, University of Toronto (Canada)
 William Gibb, Other (Canada)
 Emily Camm, Other (United Kingdom)
 Andrew Kane, Other (United Kingdom)
 Dino Giussani, Other (United Kingdom)
 Stephen Matthews, Department of Physiology, University of Toronto (Canada)
- 10:05 AM - **POSTER GROUP D (Obstetrics I/Paediatric & Adolescent Gynaecology) Poster Session I (am) (Ground Floor, Rm 007)**
 11:05 AM Co-Chair: Dr. Gareth Seaward
 Co-Chair: Dr. Paul Bernstein
 Judge: Dr. Richard Pittini
- 10:05 AM - **Barriers to achieving a successful vaginal birth – a retrospective chart review (D1)**
 10:15 AM **Rebecca Menzies**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jenna Blumenthal, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Andrea Lausman, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:15 AM - **Abdominal visceral adiposity and insulin resistance in early pregnancy (D2)**
 10:25 AM **Leanne De Souza**, St Michael's Hospital (Canada)
 Eva Kogan, St Michael's Hospital (Canada)
 Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Gerald Lebovic, St Michael's Hospital (Canada)
 Joel Ray, St Michael's Hospital (Canada)
- 10:25 AM - **Obstetrical Risk Awareness in Primiparous Women Over the Age of 35 (D3)**
 10:35 AM **Nicole Carpe**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Amanda Selk, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 10:35 AM - **Office D&C Utilizing Ultrasound Guidance for Missed Abortion: An Analysis of Complications Compared with Non-U/S Guided Hospital and/or Office D&C (D4)**
 10:45 AM **Michael Chaikof**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Tal Lazer, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Kevin Quach, Other (Canada)
 Prati Sharma, Other (Canada)
 Karen Glass, Other (Canada)
 Ari Baratz, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:45 AM - **Has the Management of Pediatric and Adolescent Ovarian Torsion changed over the past 25 years? (D5)**
 10:55 AM **Nicole Hubner**, Hospital for Sick Children (Canada)
 Jacob Langer, Hospital for Sick Children (Canada)
 Sari Kives, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Lisa Allen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:55 AM - **Barriers, expectations, and needs of young women during the transition from pediatric to adult gynecological care (D6)**
 11:05 AM **Jennifer Hunter**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Lisa Allen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Yolanda Kirkham, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:05 AM – POSTER GROUP E (Reproductive Endocrinology) Poster Session I**
11:05 PM (am) (1st Floor, Rm 113)
 Co-Chair: Dr. Andrea Jurisicova
 Co-Chair: Dr. Ian Rogers
 Judge: Dr. Theodore Brown

- 10:05 AM - 10:15 AM **Estradiol levels in breast tissue are not different between post-menopausal healthy women regardless of hormone replacement status. (E1)**
Lucy Ann Behan, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Hala Goma, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Hend Ahmado, Other (Canada)
Sara Abdulwahab, Other (Canada)
Wendy Wolfman, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Aaron Wheeler, Other (Canada)
Robert Casper, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:15 AM - 10:25 AM **The Role of the Novel Reproductive Peptide Phoenixin-20 Amide in the Regulation of GnRH Transcription and Secretion in a GnRH Hypothalamic Cell Model (E2)**
Alice Treen, Department of Physiology, University of Toronto (Canada)
Denise Belsham, Department of Physiology, University of Toronto (Canada)
- 10:25 AM - 10:35 AM **Transforming Growth Factor Betas (TGFβs)–Novel Regulators of Sphingolipid Metabolism in the Human Placenta (E3)**
Sarah Chauvin, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Martin Post, Hospital for Sick Children (Canada)
Isabella Caniggia, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:35 AM - 10:45 AM **Progesterone Receptor A mediates de-repression of Connexin43 expression (E4)**
Lubna Nadeem, Lunenfeld-Tanenbaum Research Institute (Canada)
Oksana Shynlova, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Xuesen Dong, Other (Canada)
Stephen Lye, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 10:45 AM - 10:55 AM **High saturated fatty-acid attenuates insulin signaling in mouse GnRH neuronal cell model, mHypoA-GnRH/GFP (E5)**
Dean Tran, Department of Physiology, University of Toronto (Canada)
Leigh Wellhauser, Department of Physiology, University of Toronto (Canada)
Jennifer Chalmers, Department of Physiology, University of Toronto

(Canada)
Alice Treen, Department of Physiology, University of Toronto (Canada)
Denise Belsham, Department of Physiology, University of Toronto
(Canada)

10:55 AM - **The Role of Ovarian Factors on Fetoplacental Microvascular Growth**
11:05 AM **in Late Gestation in Mice (E6)**
Sarah Isaac, Department of Physiology, University of Toronto (Canada)
Andras Nagy, Department of Obstetrics and Gynaecology, University of
Toronto (Canada)
S Lee Adamson, Department of Obstetrics and Gynaecology, University
of Toronto (Canada)

10:05 AM- POSTER GROUP F (Stem Cell Biology) Poster Session I (am) (1st
11:05 AM Floor, Rm 113)
Co-Chair: Dr. S Lee Adamson
Co-Chair: Dr. Prati Sharma
Judge: Dr. Alexandra Kollara

10:05 AM - **Establishment and Application of Mice with Personalized Immune**
10:15 AM **Systems; The “Real” Avatar (F1)**
Huijuan Yang, Department of Physiology, University of Toronto
(Canada)
Andras Nagy, Department of Obstetrics and Gynaecology, University of
Toronto (Canada)
Ian Rogers, Department of Obstetrics and Gynaecology, University of
Toronto (Canada)

10:15 AM - **Differentiating Pluripotent Stem Cells and Trans-differentiating**
10:25 AM **Fibroblasts to Six2+ Renal Progenitors for Kidney Cell Therapy**
(F2)
Theresa Chow, Department of Physiology, University of Toronto
(Canada)
Manpreet Sambi, Lunenfeld-Tanenbaum Research Institute (Canada)
Jennifer Whiteley, Lunenfeld-Tanenbaum Research Institute (Canada)
Claudio Monetti, Lunenfeld-Tanenbaum Research Institute (Canada)
Mira Li, Lunenfeld-Tanenbaum Research Institute (Canada)
Peter Tonge, Lunenfeld-Tanenbaum Research Institute (Canada)
Andras Nagy, Department of Obstetrics and Gynaecology, University of
Toronto (Canada)
Ian Rogers, Department of Obstetrics and Gynaecology, University of
Toronto (Canada)

10:25 AM - **Human Umbilical Cord-derived Perivascular Cells can Differentiate**
10:35 AM **into Endothelial-like Cells in vitro (F3)**

Russell Yanofsky, Other (Canada)

Joe Fish, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Peter Szaraz, Department of Physiology, University of Toronto (Canada)

Andrée Gauthier-Fisher, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Leila Maghen, Other (Canada)

Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

10:35 AM - **Combined Cell and Gene Therapy towards the Treatment of Age-**
10:45 AM **related Macular Degeneration and Diabetic Retinopathy (F4)**

Sabiha Hacibekiroglu, Lunenfeld-Tanenbaum Research Institute (Canada)

Iacovos Michael, Other (Switzerland)

Peter Westenskow, Other (United States)

Brian Ballios, Other (Canada)

Mitrousis Nikolaos, Other (Canada)

Tuo Jingsheng, Other (United States)

Chi Chao Chan, Other (United States)

Shelley Boyd, St Michael's Hospital (Canada)

Molly Shoichet, Other (Canada)

Derek van der Kooy, Other (Canada)

Martin Friedlander, Other (United States)

Andras Nagy, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

10:45 AM - **Human umbilical cord-derived perivascular cells support**
10:55 AM **angiogenesis in vitro (F5)**

Joe Fish, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Russell Yanofsky, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Leila Maghen, Other (Canada)

Peter Szaraz, Department of Physiology, University of Toronto (Canada)

Shlomit Kenigsberg, Other (Canada)

Andrée Gauthier-Fisher, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 10:55 AM - **Human Umbilical Cord-derived Perivascular Cells Promote Wound Healing in an In vitro Model of Cardiomyocyte Injury (F6)**
 11:05 AM **Matthew Librach**, Other (Canada)
 Peter Szaraz, Department of Physiology, University of Toronto (Canada)
 Leila Maghen, Other (Canada)
 Tanya Barretto, Other (Canada)
 Andrée Gauthier-Fisher, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- POSTER GROUP G (Global Health, Health Delivery I & Education)**
Poster Session I (am) (First Floor, Rm 119)
 10:05 AM- Co-chair: Dr. Patricia Lee
 11:05 AM Co-Chair: Dr. Joan Murphy
 Judge: Dr. Lisa Allen
- 10:05 AM - **Validation of the Generic Error Rating Tool (GERT) in gynecologic laparoscopy (G1)**
 10:15 AM **Heinrich Husslein**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Lindsay Shirreff, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Esther Bonrath, St Michael's Hospital (Canada)
 Eliane Shore, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Guylaine Lefebvre, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Teodor Grantcharov, St Michael's Hospital (Canada)
- 10:15 AM - **Qualitative analysis to establish verbal and non-verbal components of teaching skilled vaginal breech, non-rotational forceps and Kiellands deliveries (G2)**
 10:25 AM **Andrea Simpson**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 David Gurau, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Michael Secter, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Eva Mocarski, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Richard Pittini, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 John Snelgrove, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Rory Windrim, Department of Obstetrics and Gynaecology, University of

Toronto (Canada)
Mary Higgins, Other (Ireland)

10:25 AM -
10:35 AM

The relationship between perceived stigma, social support and quality of life in single mothers by choice (G3)
Jing Yu, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Kevin Quach, Other (Canada)
Jan Silverman, Other (Canada)
Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

10:35 AM -
10:45 AM

Preliminary Quantitative Evaluation of Afya Jamii (Group Care) in Western Kenya (G4)
Amy Zipursky, Other (Canada)
Carolyn Kipkoech, Other (Kenya)
Rachel Spitzer, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Astrid Christoffersen-Deb, Department of Obstetrics and Gynaecology, University of Toronto (Kenya)

10:45 AM -
10:55 AM

The Community Health Volunteer Incentive Project (G5)
Sanjana Mitra, Other (Canada)
Astrid Christoffersen-Deb, Department of Obstetrics and Gynaecology, University of Toronto (Kenya)
Suzanne Jackson, Other (Canada)
Diana Menya, Other (Kenya)

10:55 AM -
11:05 AM

Chama cha MamaToto: Evaluation of a Peer Support Mechanism to Improve Maternal and Infant Health in Western Kenya (G6)
Kelsey Ragan, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Justus Elung'at, Other (Kenya)
Monica Atieno, Other (Kenya)
Rachel Spitzer, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Julia Songok, Other (Kenya)
Astrid Christoffersen-Deb, Department of Obstetrics and Gynaecology, University of Toronto (Kenya)

**11:10 AM-
12:10 PM**

ORAL SESSION II O6-O9 (Auditorium, Ground Floor Rm 003)
Oral Session Chair: Dr. Kellie Murphy
Judge: Dr. Isabella Caniggia
Judge: Dr. Lilian Gien

- 11:10 AM - **VEPH1 Modulation of TGF- β and Androgen Receptor Signaling:**
 11:25 AM **Evidence that VEPH1 Activity may be Regulated by Phosphorylation (O6)**
Premalatha Shathasivam, Lunenfeld-Tanenbaum Research Institute (Canada)
 Alexandra Kollara, Lunenfeld-Tanenbaum Research Institute (Canada)
 Theodore Brown, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 11:25 AM - **Human Umbilical Cord Perivascular Cells: Novel Candidates for Post**
 11:40 AM **Infarct Cellular Therapy (O7)**
Peter Szaraz, Department of Physiology, University of Toronto (Canada)
 Matthew Librach, Other (Canada)
 Leila Maghen, Other (Canada)
 Tanya Barretto, Other (Canada)
 Andrée Gauthier-Fisher, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 11:40 AM - **Ovarian high grade serous cancer xenografts as pre-clinical models of**
 11:55 AM **response to chemotherapy (O8)**
Paulina Cybulska, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jocelyn Stewart, Other (Canada)
 Blaise Clarke, Other (Canada)
 Benjamin Neel, Other (Canada)
 Marcus Bernardini, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 11:55 AM - **Bedside Rounding and Ward Task List Use in Gynaecology (O9)**
 12:10 PM **Lindsay Shirreff**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Eliane Shore, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Heinrich Husslein, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Mark Yudin, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Guylaine Lefebvre, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

12:15 PM – 1:45 PM	Lunch (Strachan Hall, Trinity College)
1:50 PM – 3:05 PM	ORAL SESSION III O10-O14 (Auditorium, Ground Floor Rm 003) Oral Session Chair: Dr. Arthur Zaltz Judge: Dr. Cynthia Maxwell Judge: Dr Carl Laskin
1:50 PM - 2:05 PM	Unfractionated Heparin, Placental Ultrasound and Placental Histopathology: Secondary analysis of a pilot randomized controlled trial (O10) Rohan D'Souza , Department of Obstetrics and Gynaecology, University of Toronto (Canada) Sarah Keating, Mount Sinai Hospital (Canada) Melissa Walker, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Sascha Drewlo, Department of Obstetrics and Gynaecology, University of Toronto (Canada) John Kingdom, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
2:05 PM - 2:20 PM	Site-specific Increases in Utero- and Feto-placental Arterial Vascular Resistance in eNOS Deficient Mice Due to Impaired Arterial Enlargement (O11) Monique Rennie , Hospital for Sick Children (Canada) Anum Rahman, Hospital for Sick Children (Canada) Kathie Whiteley, Lunenfeld-Tanenbaum Research Institute (Canada) John Sled, Hospital for Sick Children (Canada) S Lee Adamson, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
2:20 PM - 2:35 PM	Validation of a Comprehensive Evidence-Based Laparoscopy Curriculum for Gynecology Residents (O12) Eliane Shore , Department of Obstetrics and Gynaecology, University of Toronto (Canada) Teodor Grantcharov, St Michael's Hospital (Canada) Heinrich Husslein, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Lindsay Shirreff, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Nicolas Dedy, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Colleen McDermott, Department of Obstetrics and Gynaecology, University of Toronto (Canada) Guylaine Lefebvre, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 2:35 PM - **Clinical Risk Factors and Whole Blood Gene Expression Predictive of Preterm Birth in Asymptomatic Women in Calgary (O13)**
 2:50 PM **Jan Heng**, Lunenfeld-Tanenbaum Research Institute (Canada)
 Sheila McDonald, Other (Canada)
 Angela Vinturache, Other (Canada)
 Jingxiong Xu, Lunenfeld-Tanenbaum Research Institute (Canada)
 Andrew Lyon, Other (Canada)
 Donna Slater, Other (Canada)
 Craig Pennell, Other (Australia)
 Suzanne Tough, Other (Canada)
 Stephen Lye, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 2:50 PM - **What is the Effect of Social Inequality on Preterm Birth? Evidence from the U.K. Millennium Cohort Study. (O14)**
 3:05 PM **John Snelgrove**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Kellie Murphy, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:05 PM – 3:25PM Coffee Break & Poster Session II Walkabout Poster Groups H-M (Ground Floor Rms 004, 006, 007; 1st Floor Rms 113,119)**
 Poster presenters attend their posters and attendees may view at their leisure and ask questions.
- 3:25 PM – 4:25 PM POSTER SESSION II Tours (Groups H-M) (Ground Floor Rms 004, 006, 007; 1st Floor Rms113, 119)**
- 3:25 PM – 4:25 PM POSTER GROUP H (Infertility II) Poster Session II (pm) (Ground Floor, Rm 004)**
 Co-Chair: Dr. Edward Ryan
 Co-Chair: Dr. Alicia Tone
 Judge: Dr. Yaakov Bentov (except H6)
 Judge: Dr Marjorie Dixon (H6)
- 3:25 PM - **Prediction of Oocyte Yield after Administration of a Gonadotropin-Releasing Hormone (GnRH) Agonist Trigger (H1)**
 3:35 PM **Crystal Chan**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Ritika Arora, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Heather Shapiro, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Ellen Greenblatt, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 3:35 PM - **Development of Next Generation Sequencing (NGS) for**
 3:45 PM **Preimplantation Genetic Screening (PGS) of Human Embryos for Aneuploidy (H2)**
Alexander Lagunov, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Rina Abramov, Other (Canada)
 Valeriy Kuznyetsov, Other (Canada)
 Siamak Bashar, Other (Canada)
 Zenon Ibarrientos, Other (Canada)
 Gelareh Motamedi, Other (Canada)
 Mike Crowe, Other (Canada)
 Hanna Balakier, Other (Canada)
 Theodore Brown, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:45 PM - **A Human Umbilical Cord-Derived Perivascular Cell Feeder**
 3:55 PM **Culture System for the Ex-Vivo Propagation of Spermatogonial Stem Cells. (H3)**
Ekaterina Shlush, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Tanya Barretto, Other (Canada)
- 3:55 PM - **IVF Success Rates in Patients Who Have Previously Undergone**
 4:05 PM **Surgical Therapy for Endometriosis is Correlated with the Disease Stage. (H4)**
Basheer AlKudmani, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Daniel Buell, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Joveriyah Salman, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Prati Sharma, Other (Canada)
- 4:05 PM - **The relationship between gender role identity and quality of life in**
 4:15 PM **men experiencing infertility (H5)**
Marc Dagher, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Kevin Quach, Other (Canada)
 Sergey Moskovtsev, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jan Silverman, Other (Canada)

Clifford Librach, Department of Obstetrics and Gynaecology,
University of Toronto (Canada)

4:15 PM -
4:25 PM

Age-Associated Elongation of Telomere Length in Human Spermatozoa (H6)

Pamela Chan, Department of Physiology, University of Toronto (Canada)

Sergey Moskvovtsev, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Shlomit Kenigsberg, Other (Canada)

Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

POSTER GROUP I (Maternal-Fetal Medicine II) Poster Session II (pm) (Ground Floor, Rm 006)

3:25 PM –
4:25 PM

Co-Chair: Dr. Ellen Greenblatt

Co-Chair: Dr. Sergey Moskvovtsev

Judge: Dr. Christine Derzko

3:25 PM -
3:35 PM

Cord Occlusion in Complicated Monochorionic Multiple Pregnancies: Comparison of Techniques (I1)

Darine El-Chaar, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Kathy Gouin, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Kara Aitken, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Rory Windrim, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Gareth Seaward, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Johannes Keunen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Robert Beecroft, Mount Sinai Hospital (Canada)

John Kachura, University Health Network (Canada)

Prakesh Shah, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

Greg Ryan, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 3:35 PM - **Sphingosine-1-Phosphate (S1P) and Regulation of Drug**
 3:45 PM **Transporter (P-glycoprotein) Activity in the Developing Blood-Brain Barrier (I2)**
Samantha Kearney, Department of Physiology, University of Toronto (Canada)
 William Gibb, Other (Canada)
 Stephen Matthews, Department of Physiology, University of Toronto (Canada)
- 3:45 PM - **The impact of adoption of the IADPSG criteria for the screening**
 3:55 PM **and diagnosis of gestational diabetes (I3)**
Karli Mayo, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Nir Melamed, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Hilde Vandenbergh, St Michael's Hospital (Canada)
 Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:55 PM - **Pregnancy Outcomes of Women Admitted to a Tertiary Care**
 4:05 PM **Centre with Short Cervix (I4)**
Alison Shea, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Andrea Simpson, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jon Barrett, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Noor Ladhani, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Ori Nevo, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 4:05 PM - **Characterizing the protein expression and localization pattern of myometrial**
 4:15 PM **MMPs throughout pregnancy, labour and post-partum in rats (I5)**
Tina Tu-Thu Nguyen, Lunenfeld-Tanenbaum Research Institute (Canada)
 Oksana Shynlova, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Stephen Lye, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 4:15 PM - **A Combination of Single Nucleotide Polymorphisms in the 3'Untranslated**
 4:25 PM **Region of HLA-G is Associated with Preeclampsia (I6)**
Kirah Hahn, Other (Canada)
 Yuan Zhang, Department of Obstetrics and Gynaecology, University of Toronto

(Canada)
 Kevin Quach, Other (Canada)
 Stephanie Grover, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Shlomit Kenigsberg, Other (Canada)
 Clifford Librach, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

3:25 PM – POSTER GROUP J (Maternal-Fetal Medicine III) Poster Session II (pm) (1st Floor, Rm 007)

Co-Chair: Dr. Clifford Librach
 Co-Chair: Dr. Sari Kives
 Judge: Dr. Janet Bodley

3:25 PM - Antenatal Glucocorticoid Treatment Has Multigenerational Effects On Behavior Of Juvenile Offspring Via Paternal Transmission (J1)

Vasilis Moisiadis, Department of Physiology, University of Toronto (Canada)
 Alisa Kostaki, Department of Physiology, University of Toronto (Canada)
 Stephen Matthews, Department of Physiology, University of Toronto (Canada)

3:35 PM - Using estimated fetal weight at level II ultrasonography to predict gestational diabetes mellitus and newborn macrosomia (J2)

Pamela Liao, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Alison Park, Other (Canada)
 Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Joel Ray, St Michael's Hospital (Canada)

3:45 PM - Maternal and Neonatal Outcomes in Triplet Gestation – A North American Experience (J3)

Anne-Maude Morency, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Wendy Whittle, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Gareth Seaward, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Prakesh Shah, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Kellie Murphy, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- Antenatal Glucocorticoid Treatment and Programming of the Juvenile Pituitary (J4)**
 3:55 PM - **Fabiha Rahman**, Department of Physiology, University of Toronto
 4:05 PM (Canada)
 Vasilis Moisiadis, Department of Physiology, University of Toronto (Canada)
 Stephen Matthews, Department of Physiology, University of Toronto (Canada)
- Treating Early Onset Preeclampsia in Triplets with Severe IUGR by Fetal Reduction: A Case Report (J5)**
 4:05 PM - **Carmen McCaffrey**, Department of Obstetrics and Gynaecology,
 4:15 PM University of Toronto (Canada)
 Ori Nevo, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Jon Barrett, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Elad Mei-Dan, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- TGF β -mediated Polarization of Decidual Neutrophils (J6)**
 4:15 PM - **Melissa Kwan**, Department of Physiology, University of Toronto
 4:25 PM (Canada)
 Caroline Dunk, Lunenfeld-Tanenbaum Research Institute (Canada)
 Stephen Lye, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- POSTER GROUP K (Gynaecologic Oncology I) Poster Session II (pm) (1st Floor, Rm 113)**
 3:25 PM – Co-Chair: Dr. Howard Berger
 4:25 PM Co-Chair: Dr. Adrian Brown
 Judge: Dr. Mathew Sermer
- Is Venous Thromboprophylaxis Necessary in Patients Undergoing Minimally Invasive Surgery for a Gynecologic Malignancy? (K1)**
 3:25 PM - **Genevieve Bouchard-Fortier**, Department of Obstetrics and
 3:35 PM Gynaecology, University of Toronto (Canada)
 William Geerts, Sunnybrook Health Sciences Centre (Canada)
 Allan Covens, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Rachel Kupets, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Danielle Vicus, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Lilian Gien, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 3:35 PM - **The Impact of BRCA1 Expression on Glucocorticoid Receptor Signaling in Ovarian Cancer Cells (K2)**
 3:45 PM **Vladimir Djedovic**, Department of Physiology, University of Toronto (Canada)
 Alexandra Kollara, Lunenfeld-Tanenbaum Research Institute (Canada)
 Theodore Brown, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:45 PM - **Does the Initial Management of High-Grade Serous Ovarian Cancer Predict Sites of Recurrence? (K3)**
 3:55 PM **Clara Cheong**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Paulina Cybulska, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Grainne Murphy, Other (Canada)
 Jocelyn Stewart, Other (Canada)
 Sarah Ferguson, Other (Canada)
 Ur Metser, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Marcus Bernardini, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:55 PM - **SPARC inhibits VEGF-induced activation of ERK and p38 MAPK and blocks endothelial cell migration and proliferation. (K4)**
 4:05 PM **Soyeon Park**, Other (Canada)
 Alexandra Kollara, Lunenfeld-Tanenbaum Research Institute (Canada)
 Annie Bourdeau, Other (Canada)
 Marzena Cydzik, Other (Canada)
 Jean Gariepy, Other (Canada)
 Maurice Ringuette, Other (Canada)
 Theodore Brown, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 4:05 PM - **Surgical Factors and Timing of Surgery Do Not Impact Survival in Patients with High-Grade Serous Ovarian Cancer Treated with Neoadjuvant Chemotherapy (K5)**
 4:15 PM **Jocelyn Stewart**, University Health Network (Canada)
 Alicia Tone, University Health Network (Canada)
 Barry Rosen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Taymaa May, University Health Network (Canada)

- 4:15 PM - **Performance Study of the Risk of Malignancy Index (RMI) and Risk of Ovarian Malignancy Algorithm (ROMA) by Histology and Stage of Disease in Women Dia (K6)**
 4:25 PM **Genevieve Lennox**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Lua Eiriksson, Other (Canada)
 Clare Reade, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Felix Leung, Other (Canada)
 Golnessa Mojtahedi, Other (Canada)
 Eshetu Atenafu, Other (Canada)
 Sarah Ferguson, Other (Canada)
 Joan Murphy, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Eleftherios Diamandis, Other (Canada)
 Vathany Kulasingam, Other (Canada)
 Marcus Bernardini, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:25 PM – **POSTER GROUP L (Obstetrics II / Health Delivery II) Poster Session II (pm) (1st Floor, Rm 119)**
 4:25 PM Co-Chair: Dr. Sarah Ferguson
 Co-Chair: Dr. Noor Ladhani
 Judge : Dr. Marcus Bernardini
- 3:25 PM - **Oral Administration of Lactobacillus rhamnosus GR-1 alters the vaginal microbiome profile but not the cecal microbiome in pregnant CD-1 mice (L1)**
 3:35 PM **Siwen Yang**, Department of Physiology, University of Toronto (Canada)
 Alan Bocking, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Wei Li, Department of Physiology, University of Toronto (Canada)
 John Challis, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Gregor Reid, Other (Canada)
 Gregory Gloor, Other (Canada)
- 3:35 PM - **Neonatal Outcomes of Preterm twins According to Presentation and Mode of delivery (L2)**
 3:45 PM **Tiffany Hunter**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Anne Synnes, Other (Canada)
 Sandesh Shivananda, Other (Canada)
 Junmin Yang, Department of Obstetrics and Gynaecology, University of

Toronto (Canada)
 Lucia Mirea, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Prakesh Shah, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Greg Ryan, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Kellie Murphy, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

3:45 PM - **HIV knowledge among pregnant women at an inner city hospital in Toronto, Canada (L3)**

3:55 PM

Muhseen Yusuf, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Leanne De Souza, St Michael's Hospital (Canada)
 Kate Besel, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Mark Yudin, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

3:55 PM - **Patient Profile and Reproductive Health Concerns of Young Women Attending a Specialized Gynecology Clinic (L4)**

4:05 PM

Alexandra Mardimae, Other (Canada)
 Lisa Allen, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Yolanda Kirkham, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

4:05 PM - **Web-based education and attitude to Caesarean Delivery in Nulliparous Women (L5)**

4:15 PM

Anjali Kulkarni, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 John Kingdom, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Emily Wright, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

3:25 PM – **POSTER GROUP M (Urogynaecology Oncology II) Poster Session II (pm) (1st Floor, Rm 119)**

4:25 PM

Co-Chair: Dr. Wendy Wolfman
 Co-Chair: Dr. Guylaine Lefebvre
 Judge: Dr. Ari Baratz

- 3:25 PM - **Static Stretch Influences The Expression of Extracellular Matrix**
 3:35 PM **Proteins In Vaginal Fibroblasts Derived From Women With Severe Pelvic Organ Prolapse (M1)**
Hala Kufaishi, Lunenfeld-Tanenbaum Research Institute (Canada)
 Yaryna Rybak, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Harold Drutz, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 May Alarab, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Oksana Shynlova, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:35 PM - **Use of Validated Standardized Questionnaires in Urogynecology: A**
 3:45 PM **Survey (M2)**
Pieter Kruger, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Patricia Lee, Sunnybrook Health Sciences Centre (Canada)
- 3:45 PM - **The Impact of Social Determinants of Health on Post Partum Older**
 3:55 PM **Primiparous Women's Perceptions of Prenatal Care: A needs assessment. (M3)**
Shira Gold, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Amanda Selk, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 3:55 PM - **The Effect of Preoperative Waiting Time on the Quality of Life of**
 4:05 PM **Urogynaecology Patients as Compared to Orthopaedic Patients: Interim Results (M4)**
Yvonne Leong, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Sayoko Kotani, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Carolyn Best, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Phaedra Diamond, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Danny Lovatsis, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
 Harold Drutz, Department of Obstetrics and Gynaecology, University of Toronto (Canada)

- 4:05 PM - **Identifying Barriers to Colposcopy Services in Women with Abnormal Pap Smears at Women's College Hospital (M5)**
4:15 PM **Monica Abdelmasih**, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
Amanda Selk, Department of Obstetrics and Gynaecology, University of Toronto (Canada)
- 4:30 PM – **Henderson Lecture Professor Aidan Halligan: "Rediscovering lost values: Leadership in a challenging clinical environment"**
5:30 PM **(Auditorium, Ground Floor Rm 003)**
- Professor Aidan Halligan**
- University College London Hospitals and UCLP NHS Staff College
Rediscovering lost values: Leadership in a challenging clinical environment□
- Closing Remarks: Dr. John Kingdom
- 5:30 PM – **Wine and Cheese Reception and JW Knox Ritchie Research Awards Ceremony**
6:30 PM **(Atrium, Goldring Centre (Charles St) Café)**

THE D. NELSON HENDERSON LECTURESHIP IN OBSTETRICS AND GYNAECOLOGY

The D. Nelson Henderson Lectureship in Obstetrics and Gynaecology was established in 1965, through the generosity of the Henderson family, in honour of Dr. Donald Nelson Henderson, a highly respected clinician-scientist and eminent member of the Department of Obstetrics and Gynaecology at the Toronto General Hospital.



Professor Aidan Halligan

We are very pleased to welcome the Henderson Lecturer this year, **Professor Aidan Halligan** MA, MD, FRCOG, FFPHM, MRCPI of University College London Hospitals, London, United Kingdom. Dr Halligan will speak on “Rediscovering lost values: Leadership in a challenging clinical environment”

Dr Halligan has wideranging experience, encompassing governance, education and quality of care through a number of positions in health care in the United Kingdom and through his charitable work.

Previous Henderson lecturers and topics:

- 2013 **Dr. Zulfiqar A. Bhutta**, Noordin Noormahomed Sheriif Endowed Professor and Founding Chair of the Division of Women and Child Health, Aga Khan University, Karachi, Pakistan
Maternal Health and Nutrition: Global Challenges and Solutions!
- 2012 **Dr, Patrick Catalano**, Professor, Reproductive Biology, MetroHealth Medical Center/Case Western Reserve University, Cleveland, Ohio, USA
Maternal Obesity and Pregnancy: Much Ado about Something.
- 2011 **Dr Philip Castle**, American Society of Clinical Pathology (ASCP) Institute, USA
Separating the Wheat from the Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer
- 2010 **Dr. Jane Norman**, University of Edinburgh, UK, Edinburgh Tommy’s Centre for Maternal and Fetal Health Research
Being Born Too Soon – Do Obstetricians Have Anything to Offer?
- 2009 **Dr. David L Keefe**, University of South Florida, Tampa, Florida, USA
Burning The Candle at Both Ends – A Telomere Theory of Reproductive Aging
- 2008 **Dr. Andrew Berchuck**, Duke University Medical Center, Durham, North Carolina, USA
Individualized Ovarian Cancer Treatment and Prevention in the Genomic Era

- 2007 **Dr. David Phillips**, University of Southampton, UK
Small Babies, Stress and the Metabolic Syndrome
- 2006 **Dr. Robert L Reid**, Queen's University, Kingston, Ontario.
Bringing Scientific Discovery into the Public Domain: Rigour and Responsibility
- 2005 **Dr. Chris Redman**, University of Oxford, UK
A New View of Pre-Eclampsia
- 2004 **Dr. JB Trimbos**, Leiden University, The Netherlands
Nerve Sparing in Radical Surgery: Technique and Proof of Principle
- 2002 **Dr. David A Grimes**, Family Health International, North Carolina, USA
Potholes on the Road to Evidence-Based Practice
- 2001 **Dr. DT Baird**, University of Edinburgh, UK
Hormonal Control of Folliculo-Genesis: The Key to Successful Reproduction
- 2000 **Dr. Les Myatt**, University of Cincinnati, USA
Prediction of Preeclampsia – Is it Possible?

JW Knox Ritchie Research Awards



Dr. JW Knox Ritchie

The JW Knox Ritchie Research Awards were endowed by a grateful medical staff at the Department of Obstetrics and Gynaecology, Mount Sinai Hospital and the University of Toronto, on the occasion of Dr. Ritchie's retirement from the position of Chief for Mount Sinai and Chair for the University of Toronto Departments of Obstetrics and Gynaecology in 2003.

The JW Knox Ritchie Research Awards are awarded for best abstract/presentation by trainee category (Graduate Student, Resident, Clinical Fellow, Post-Doctoral Fellow, Medical Student). The winners are eligible to represent the Department in the national Best of the Best competition at the Association of Professors of Obstetrics & Gynaecology of Canada (APOG) annual meeting.

The **2014 JW Knox Ritchie Research Awards** for best abstract/presentation by trainee category were awarded during the celebratory wine and cheese reception at the end of Research Day. We are very pleased to announce the following winners:

Post-Doctoral Fellow: **Lubna Nadeem** (Supervisor: Stephen Lye) AND **Monique Rennie** (Supervisor: S Lee Adamson)

Clinical Fellow: **Heinrich Husslein** (Supervisor: Guylaine Lefebvre) AND **Rohan D'Souza** (Supervisor: John Kingdom)

Resident: **Paulina Cybulska** (Supervisor: Marcus Bernardini)

Graduate Student: **Stephanie Baello** (Supervisor: Stephen Matthews)

Student: **Matthew Librach** (Supervisor: Clifford Librach)

Previous recipients of the JW Knox Ritchie Research Awards:

2013 Post-Doctoral Fellow: **Peter Szaraz** (Supervisor: Clifford Librach)
Clinical Fellow: **Clare J Reade** (Supervisor: Ray Osborne)
Resident: **Julia Kfoury** (Supervisor: Patricia Lee)
Graduate Student: **Andrew Corso** (Supervisor: Andras Nagy)
Student: **Melissa Walker** (Supervisor: Rory Windrim) AND **Marina Vainder** (Supervisor: Clifford Librach)

2012 Post-Doctoral Fellow: **Sascha Drewlo** (Supervisor: J. Kingdom)
Clinical Fellow: **Kimberley Garbedian** (Supervisor: Kimberley Liu)

Resident: **Stéphanie Backman** (Supervisor: Theodore J Brown)
Graduate Student: **Theresa Chow** (Supervisor: Ian Rogers)
Student: **Sarah Cao** (Supervisor: A. Jurisicova)

- 2011** Post-Doctoral Fellow: **Fergus McCarthy** (Supervisor: J. Kingdom)
Clinical Fellow: **Tania Dumont** (Supervisor: L. Allen) AND
Kimberley Garbedian (Supervisor: B. Cruickshank)
Resident: **Daniela Caprara** (Supervisor: M. Yudin)
Graduate Student: **Crystal Chan** (Supervisors: E. Greenblatt and T. J. Brown)
Medical Student: **Ingrid Lai** (Supervisor: E. Greenblatt)
- 2010** Post-Doctoral Fellow: **Alicia Tone** (Supervisor: T.J. Brown)
Clinical Fellow: **Dini Hui** (Supervisor: N. Okun)
Resident: **Mara Sobel** (Supervisor: J. Kingdom)
Graduate Student: **Jocelyn Ray** (Supervisor: I. Caniggia)
Medical Student: **Marie Wegener** (Supervisor: S. Ferguson)
- 2009** Post-Doctoral Fellow: **Sascha Drewlo** (Supervisor: J. Kingdom)
Clinical Fellow: **Clarissa Bambao** (Supervisor: M. Shier)
Resident: **Kelly Chu** (Supervisor: K. Murphy)
Graduate Student: **Shadab Rahman** (Supervisor: R. Casper)
Medical Student: **Erika Frasca** (Supervisor: O. Nevo)
- 2008** Post-Doctoral Fellow: **Christine Wong** (Supervisor: R. Casper)
Clinical Fellow: **Marcus Bernardini** (Supervisor: A. Covens)
Resident: **Taymaa May** (Supervisor: T.J. Brown)
Graduate Student: **Maryam Yeganegi** (Supervisor: A. Bocking)
Medical Student: **Sue Jin Kim** (Supervisor: W. Whittle)
- 2007** Post-Doctoral Fellow: **Sascha Drewlo** (Supervisor: J. Kingdom)
Clinical Fellow: **Kimberly Liu** (Supervisor: E. Greenblatt)
Resident: **Taymaa May** (Supervisor: T. Brown)
Graduate Student: **Ingrid Lai** (Supervisor: A. Jurisicova)
Medical Student: **K. Ashley Hawrylyshyn** (Supervisor: J. Murphy)
- 2006** Post-Doctoral Fellow: **Jing Xu** (Supervisor: I. Caniggia)
Clinical Fellow: **Valérie Dubé** (Supervisor: T. Colgan)
Resident: **Amanda Selk** (Supervisors: E. Greenblatt & H. Shapiro)
Graduate Student: **Alicia A Tone** (Supervisors: P. Shaw & T. Brown)

COLLABORATION CORNER ABSTRACTS

Abstract - ID: 95 CC1

Author(s): Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto
Nir Melamed (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Clinical Fellow

Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: A GTA based randomized controlled trial (RCT) of induction of labour versus expectant management in patients with gestational diabetes mellitus (GDM)

Abstract Keywords: GDM, RCT, Induction of labour

Précis:

There is little evidence for routine induction of labour in women with Gestational Diabetes Mellitus (GDM) yet this has become common practice.

Abstract:

Introduction:

Gestational diabetes (GDM) currently affects approximately 4-10% of the GTA population ¹ and worldwide the incidence rises to as high as 25% when new screening criteria are used ². Despite the ubiquity of this diagnosis, there is a paucity of evidence regarding the Obstetric management of these patients and specifically regarding the issue of timing of their delivery.. To date there has been only one published randomized controlled trial ³ comparing induction of labour with expectant management in patients with diabetes. This study revealed no differences in the rate of CS, shoulder dystocia, perinatal mortality and neonatal morbidity between the two groups. Despite the lack of supporting data, it is common practice for clinicians to recommend planned delivery of women with GDM at 38 weeks of gestation. Data from Ontario ⁴ show that between 2010 and 2012 the mean gestational age at delivery for women with a diagnosis of GDM was 38 weeks with an induction rate of 40% and a CS rate of 39 %. In this era of rising induction and CS rates as well as increasing budgetary constraints, an evidence based approach to managing the GDM population is critical.

Research question: Does routine induction of labour at 38 weeks of gestation reduce the rate of Cesarean section in women with GDM without increasing the rate of significant perinatal complications?

Methods:

Study design: Non blinded patient level RCT

Population:

Inclusion criteria: Women with a singleton non anomalous pregnancy and diagnosis of GDM based on 2013 CDA criteria AND have no contraindication to induction of labour.

Randomization: Block randomization stratifying for parity, study centre and BMI will occur at first Diabetic clinic visit (28-34 weeks gestation). Patients will be randomized to either active or expectant management.

Intervention:

Active management: Women will be booked for induction of labour at 38+/- 3 days of gestation. Method of induction will be determined by the attending clinician.

Expectant management: Unless indicated clinically, routine induction of labour will not be booked prior to 41 weeks of gestation. Fetal surveillance will continue according to local protocols.

Outcome measures:

Primary: Rate of CS

Secondary: Stillbirth, shoulder dystocia, LGA/macrosomia, instrumental delivery, birth asphyxia, 3rd/4th degree tears, neonatal hypoglycaemia/jaundice, NICU admission, RDS/ventilation.

Sample size: In order to detect a 25% reduction in CS rate from 40% to 30% with a type-I error of 5% and a power of 80%, 350 women will need to be recruited to each arm of the study.

Primary Category for Abstract: Maternal-Fetal Medicine

Secondary Category for Abstract: Collaboration corner

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 96 CC2

Author(s): Lindsay Shirreff (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
Lisa Allen, Department of Obstetrics and Gynaecology, University of Toronto
Richard Pittini, Department of Obstetrics and Gynaecology, University of Toronto
Ally Murji, Department of Obstetrics and Gynaecology, University of Toronto
Guylaine Lefebvre, Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Status for First (ie Presenting) Author: Clinical Fellow

Presentation Preference: Poster

Abstract Title: Variation in the Perioperative Approach to Gynaecologic Surgery: A Needs Assessment at the University of Toronto

Abstract Keywords: health care quality, gynaecologic surgery

Précis:

Inter-hospital variations in perioperative approach to gynaecologic surgery highlight the opportunity to develop an evidence-based care pathway to improve the quality of care.

Abstract:

Objective: 1) To determine differences in the perioperative approach to gynaecologic surgery among four tertiary care centres affiliated with the University of Toronto. 2) To identify an opportunity for the development of a streamlined, evidence-based perioperative pathway that can be implemented at University of Toronto affiliated hospitals to improve the quality of care provided to our gynaecologic surgery patients.

Methods: Senior gynaecologists at four tertiary care centres at the University of Toronto (Mount Sinai Hospital, St. Michael's Hospital, Sunnybrook Health Sciences Centre and Women's College Hospital) were asked to complete a survey regarding the perioperative approach to gynaecologic surgery at their site and to indicate which steps in the surgical care plan had existing protocols. Input was elicited from nursing and anaesthesia colleagues and all existing standardized perioperative order sets were reviewed. Responses were compared between sites to determine differences in care pathways.

Results: Surveys were completed at each of the four sites. No site had standardized patient education including procedures, protocols for postoperative office follow-up appointments or formal expectations on recovery time. There is variation among sites with respect to need for preoperative consultations (Anesthesia and Medicine), medication reconciliation and washing with chlorhexidine before surgery. On the day of surgery, sites differ in the following care steps: Methods used to ensure second-dose antibiotic administration when appropriate, postoperative discussions with patient families, recovery room hemodynamic monitoring and intravenous fluid administration, display of expected discharge date at the bedside, analgesia after vaginal surgery and laparotomies, diet and expectations around patient self-care and activity level. On the days following surgery, there are differences with respect to IV removal, gum chewing, discharge timing expectations and activity level after laparotomy. In terms of discharge planning, there is variation regarding discharge prescriptions, prescription explanations and guidance for heavy lifting.

Conclusions: There is substantial variation in the perioperative approach to patient care among four tertiary care hospitals affiliated with the Department of Obstetrics & Gynaecology at the University of Toronto. This study identifies an opportunity to create a standardized perioperative approach to gynaecologic surgery at our academic centre. We recommend an Enhanced Recovery After Surgery (ERAS) program, which has been a successful evidence-based initiative in the

Department of Surgery at the University of Toronto and in gynaecology departments in the United States and internationally.

Primary Category for Abstract: Gynaecology

Secondary Category for Abstract: Health Care Quality

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 98 CC4

Author(s): Rachel Spitzer (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Other

Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: AMPATH Reproductive Health - Collaboration Corner

Abstract Keywords: global health, reproductive health, collaboration

Précis:

This poster identifies our department's major international collaboration, describes the program and invites interested faculty and trainees to become involved in ongoing or novel opportunities.

Abstract:

The University of Toronto (U of T) joined AMPATH in 2007, led by its Department of Obstetrics and Gynaecology. We co-lead the AMPATH-Reproductive Health activities for the AMPATH Consortium, in partnership with Indiana University (IU).

Maternal, Newborn and Child Health (MNCH) and **Gynaecologic Oncology** are the primary foci of U of T in AMPATH. Other units from our university and affiliated hospitals play significant roles in our involvement in AMPATH. Our Toronto partners include Princess Margaret Hospital; the Dalla Lana School of Public Health; all fully affiliated hospitals - Mount Sinai Hospital, Sunnybrook Health Sciences Centre and St Michael's Hospital; the Department of Immunology; the Department of Clinical Nutrition; and, the Department of Biochemistry.

Primary Category for Abstract: Global Women's Health

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 97

CC3

Author(s): Julie Nguyen (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
Adrian Brown, Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Status for First (ie Presenting) Author: Presentation Resident

Preference: Poster

Abstract Title: Developing Best Practice Guidelines in OBGYN Departments of the GTA. A Pilot Project: Thromboprophylaxis after Ceasarean Delivery

Abstract Keywords: guidelines, thromboprophylaxis, deep vein thrombosis, ceasarean delivery

Précis:

We propose a best practice guideline initiative for thromboprophylaxis after caesarean delivery as a quality improvement project.

Abstract:

Introduction: Many studies show that publication of guidelines in Obstetrics often does not translate in significant change in clinical practice unless there are local initiatives and incentives. We would like to investigate the impact of developing and disseminating Clinical Practice Guidelines (CPG) in OBGYN departments of the Greater Toronto Area. We suggest a pilot project on deep vein thrombosis (DVT) prophylaxis after caesarean delivery (CD).

DVT and pulmonary embolism are the leading cause of maternal death in developed countries. Despite international guidelines for thromboprophylaxis after CD, studies report that prophylactic anticoagulation is still under prescribed.

We would like to seek collaboration and clinical expertise from a proposed group of obstetricians, pharmacists, and haematologists to assess the necessity for guidelines, and to propose a collaborative model for efficient dissemination, implementation and evaluation of guidelines.

We hypothesize that this would positively impact maternal outcomes. In the long run, we would

measure quality improvement indices.

Aim: Investigate the impact of an initiative to implement Best Practice Guidelines in local OBGYN departments.

Method: Develop a CPG based on a literature review of evidence-based recommendations and on additional consensus from a committee of local experts. Conduct a retrospective chart review to compare recent practice to suggested guidelines. A committee in charge of quality improvement will meet monthly to continuously evaluate access, dissemination and implementation of the proposed guideline. This committee will produce a monthly report for feedback to frontline staff. We will gather resulting maternal outcomes and adequate thromboprophylaxis as quality indicators and will develop a common quality indicator database.

This pilot project could be a scaffold for future CPGs in Obstetrics and Gynecology and towards collaboration between departments and hospitals to share evidence-based practice guidelines and quality measurement tools.

Primary Category

for Abstract: Obstetrics

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

ORAL ABSTRACTS

Author(s): Priya Bapat (**Presenter**), Hospital for Sick Children
Reuven Kedar, Hospital for Sick Children
Angelika Lubetsky, Hospital for Sick Children
Katarina Aleksa, Hospital for Sick Children
Gideon Koren, Hospital for Sick Children
Howard Berger, Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Graduate Student

Status for First (ie Presenting) Author:

Presentation Oral

Preference:

Abstract Title: The Transfer of Dabigatran and its Pro-drug Across the Dually Perfused Human Placenta – Implications For Therapy In Pregnancy

Abstract Keywords: placenta perfusion, oral anticoagulants, placental transfer, coagulation, pregnancy, dabigatran, drug safety

Précis:

The oral anticoagulant dabigatran and its prodrug cross the term human placenta from the mother to fetus.

Abstract:

Background: Anticoagulant therapy is often prescribed in pregnancy for a variety of clinical indications. Common indications include: prophylaxis of venous thromboembolism (VTE) in pregnancies at high or intermediate risk for thromboembolic disease, treatment of acute VTE in pregnancy, management of pregnancy in women with artificial heart valves, the prevention of pregnancy-related complications in women with inherited or acquired thrombophilias and antiphospholipid antibody syndrome. The concentrations of many blood-clotting factors rise during pregnancy, thereby increasing the need for anticoagulants that are safe to use throughout gestation. Dabigatran is a newer generation oral anticoagulant that is increasingly being prescribed to women of reproductive age. Dabigatran is administered as a prodrug and acts by directly inhibiting thrombin. However, the information regarding fetal safety and placental transfer of dabigatran is currently lacking.

Objective: To determine the rate and extent of transfer of the oral thrombin inhibitor, dabigatran, and its prodrug, dabigatran etexilate mesylate, in order to estimate fetal drug exposure.

Methods: Placentae were obtained with informed consent after cesarean delivery of healthy term pregnancies at St. Michael's Hospital, Toronto, Ontario. The transplacental transfer of dabigatran and its prodrug were separately assessed using the *ex vivo* dual perfusion of an isolated human placental cotyledon. Dabigatran, at a concentration of 35 ng/ml, was added to the maternal circulation at the start of the experimental phase. Maternal and fetal samples were taken throughout

the pre-experimental (1 h) and experimental (3 h) phases for measurement of dabigatran and markers of placental viability. Separate placenta perfusions with dabigatran etexilate mesylate were conducted at an initial maternal concentration of 3.5 ng/ml. Dabigatran and dabigatran etexilate mesylate were measured using liquid chromatography-tandem mass spectrometry.

Results: There was slow transfer of dabigatran from the maternal to fetal circulation, as the median fetal-to-maternal drug concentration ratio was 0.33 (IQR: 0.29–0.38) after 3 hours (n=3). The prodrug had limited placental transfer as characterized by a fetal-to-maternal ratio of 0.17 (IQR: 0.15–0.17) after 3 hours (n=3). Placental viability markers for all perfusions were within normal ranges.

Conclusion: This report provides direct evidence of the transfer of dabigatran and its prodrug across the term human placenta from the mother to the fetus. The results suggest that dabigatran and its prodrug do not equalize across the placenta. This oral anticoagulant reaches the fetus and therefore, careful assessment for fetal adverse effects must be followed.

Primary Category Maternal-Fetal Medicine
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 11 01

Author(s): Shannon Masih (**Presenter**), St Michael's Hospital
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Andrea Lausman, Department of Obstetrics and Gynaecology, University of Toronto
Ruth Croxford, Other
Deborah O'Connor, Hospital for Sick Children
Young-In Kim, St Michael's Hospital

University of Graduate Student
Toronto Trainee
Status for First (ie
Presenting) Author:

Presentation Oral
Preference:

Abstract Title: Vitamin B12: dietary intake, supplement use and serum concentrations in a cohort of Canadian pregnant women and in umbilical cord blood

Abstract Keywords: Vitamin B12, diet, supplements, pregnant women, umbilical cord blood, blood levels, Canada

Précis:

Dietary and supplemental intakes of vitamin B12 in a sample of Canadian pregnant women are suggestive of adequate intakes yet serum concentrations suggest suboptimal B12 status.

Abstract:

Optimal maternal intake and blood levels of vitamin B12 play an important role in fetal development and in health and disease of the offspring. Nonetheless, there is a paucity of data of intake and blood levels of B12 in Canadian pregnant women and in cord blood. We assessed dietary and supplemental intakes using a food frequency questionnaire and serum B12 levels in pregnant women between 12-16 wks gestation (n=342) and at parturition (n=292) and in cord blood (n=259). Mean intake of dietary B12 was 5.2 ± 3.1 µg/d and 5.2 ± 2.7 µg/d in early and late pregnancy, respectively (RDA= 2.6 µg/d). Additionally, 88% reported using a B12-containing supplement (usual amount 2.6 µg) during early pregnancy and 83% continued supplement use in late pregnancy. Median serum B12 concentrations in early pregnancy, at parturition and in cord blood were 220 (inner quartile range: 167,289) pmol/L, 167 (131,208) pmol/L and 314 (223,466) pmol/L, respectively. All participants had plasma homocysteine levels in the normal range (

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Obstetrics
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 32 04

Author(s): Salomon Zebede (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
Danny Lovatsis, Department of Obstetrics and Gynaecology, University of Toronto
May Alarab, Department of Obstetrics and Gynaecology, University of Toronto
Harold Drutz, Department of Obstetrics and Gynaecology, University of Toronto

University of Clinical Fellow
Toronto Trainee
Status for First (ie
Presenting) Author:

Presentation Oral
Preference:

Abstract Title: PREVALENCE OF OBSTRUCTIVE SLEEP APNEA DETECTED BY THE BERLIN QUESTIONNAIRE IN PATIENTS WITH NOCTURIA ATTENDING A UROGYNECOLOGY UNIT

Abstract Keywords: Nocturia, obstructive sleep apnea.

Précis:

Patients with nocturia have an increased risk of obstructive sleep apnea when compared to patients without nocturia.

Abstract:

Introduction:

Nocturia is a common reason for referral to a Urogynecology clinic. It has been associated with several chronic conditions including obstructive sleep apnea (OSA). The pathophysiological link between nocturia and OSA has been well delineated but the prevalence of this condition in patients with nocturia is unknown, with some pilot studies suggesting a very high incidence.

Objective:

To determine the prevalence of sleep apnea in patients with nocturia compared to patients without nocturia, in a group of women referred to a Urogynecology unit.

Methods:

After Ethics approval, a prospective case control study including 81 cases and 79 controls was conducted. Sample size calculation indicated a need for 72 patients in each group for a two sided confidence level, with alpha 5% and power 80%.

All consecutive newly referred patients were asked to participate. All patients completed the Nocturia, Nocturia Eneuresis and Sleep Interruption Questionnaire (NNES-Q) and the Berlin OSA questionnaire. The NNES-Q questionnaire was used to define cases and controls: cases were defined as sleep interruption due to an urge to void 2 or more times. The Berlin questionnaire was used to classify patients into 2 categories: high or low risk of having OSA.

A medical history and a urogynecological examination, as well as multichannel urodynamic test were done. Univariate analysis was first performed, followed by logistic regression (LR) to assess the association between nocturia and OSA, as well as other possible variables associated with nocturia.

Results:

Fifty (61.7%) of the cases were classified as high risk of having OSA compared to only 19 (24.1%) in the control group (logistic regression, OR 2.9, 95% CI 1.29-6.52, $p=0.01$). Other variables found to be statistically significant by logistic regression were high BMI, over active bladder and low bladder capacity (< 300 cc). Age, menopausal status, urogenital atrophy, parity, prolapse stage, prior pelvic surgery, and diabetes were not found to be significant in the logistic regression analysis. Of the cases, 10 (12.3%) reported having a positive history of OSA proven by polysomnography compared to none in the control group. NNES-Q showed that cases were more bothered by getting awakened (6.86 ± 2.31 vs. 2.81 ± 3.06 $P < .001$). Eneuresis was also more common in the cases: 35 (43.2%) vs. 9 (11.4%) ($p < .001$).

Conclusions:

Patients with nocturia showed significantly a higher risk of having OSA. All patients with nocturia should be screened for OSA. More research is needed to determinate which is the best screening tool in this population.

Primary Category for Abstract: Urogynaecology

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 88 02

Author(s): Frederic Mitri (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
Navid Esfandiari, Department of Obstetrics and Gynaecology, University of Toronto
Joan Coogan-Prewer, Department of Obstetrics and Gynaecology, University of Toronto
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Yaakov Bentov, Department of Obstetrics and Gynaecology, University of Toronto
John McNaught, Other
Anat Herscu-Klement, Department of Obstetrics and Gynaecology, University of Toronto
Robert Casper, Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Status for First (ie Presenting) Author: Clinical Fellow

Presentation Preference: No Preference

Abstract Title: A pilot study to evaluate a device for the intravaginal culture of embryos

Abstract Keywords: Embryo score, IVC device, INVOcell, IVF

Précis:

The intravaginal culture device for embryos provides acceptable results and can be used as an alternative to conventional in-vitro fertilization under certain circumstances

Abstract:

Objective: To determine if the intravaginal culture of embryos (IVC device) can provide acceptable fertilization rates, embryo development and pregnancy rates when used as an alternative to traditional conventional IVF (In-vitro fertilization) laboratory techniques.

Methods: This is a prospective randomized clinical trial with external ethics approval. Over an interval of 7 months, 10 women between the ages of 18 and 38 were recruited into the study from TCART. Participants were required to have bilateral blocked fallopian tubes, endometriosis (stage I or II) or unexplained infertility, and informed consent was obtained. All 10 participants underwent ovarian stimulation using the long agonist protocol and a minimum of 8 mature oocytes was

necessary per patient. A total of 164 oocytes were obtained and randomly distributed per patient into either the IVC device (81 oocytes) or the conventional IVF incubator (83 oocytes) allowing each patient to serve as her own control for comparison. Fresh embryos were transferred from the device and all excess embryos including those obtained from conventional IVF were cultured and frozen if they developed to the blastocyst stage. A simplified scoring system was devised based on previously validated scoring methods to compare embryo development. Fertilization rates, embryo development and pregnancy rates (when applicable) were prospectively calculated and compared among both groups. Questionnaires regarding acceptability, perception and discomfort from the device were completed by all participants.

Results: Fertilization and cleavage rates were both significantly higher in the conventional IVF group (68.7% vs 40.7%) and (63.5% vs 39.5%) respectively. Average numerical embryo quality scores were higher for embryos obtained using conventional IVF compared to the IVC device (10.3 vs 9 $P < 0.001$). A clinically acceptable pregnancy rate (32%) was obtained using the IVC device. As indicated by the questionnaire, a large proportion of women (70%) placed high importance on having had fertilization and embryo development happen naturally, while carrying the device.

Conclusions: The total number of oocytes obtained (164 oocytes) was large and sufficient to allow statistically robust analysis of the outcomes. Although the results from conventional IVF were better, the IVC device produced reasonable overall results allowing this technology to be used preferentially under certain circumstances. Cost benefit analysis and psychological factors must also be weighed in.

Funded by: The study was partially supported by an unrestricted research grant from Invaron Pharmaceuticals, Kelowna, BC

Primary Category Reproductive Endocrinology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 56 03

Author(s): Sruthi Alahari (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
Isabella Caniggia, Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Status for First (ie Presenting) Author: Graduate Student

Presentation Preference: Oral

Abstract Title: Jumonji C domain containing protein 6 (JMJD6) - a novel oxygen sensor in the human placenta

Abstract Keywords: placenta, epigenetics, hypoxia, preeclampsia, histone demethylases

Précis:

Characterization of a histone demethylase, JMJD6, as a novel regulator of HIF-1 α .

Abstract:

Objective: Disruption in oxygen sensing has been implicated in the pathogenesis of preeclampsia, a placental pathology characterized by altered oxygen milieu. We have reported that high levels of Hypoxia Inducible Factor 1 α (HIF-1 α , a transcription factor and key regulator of oxygen homeostasis), found in preeclampsia are due to altered expression of the prolyl hydroxylase enzymes that function as oxygen sensors and regulators of HIF-1 α stability. Emerging evidence implicates a family of Jumonji C domain containing histone demethylases (JMJDs) as novel oxygen sensors and regulators of hypoxic gene expression. While JMJD1A and JMJD2B are transcriptional targets of HIF-1 α , no information is available on JMJD6 and its interplay with HIF-1 α . Hence, our aim was to examine JMJD6 expression in the human placenta in normal and pathological conditions and delineate its relationship with HIF-1 α .

Methods: Western Blot (WB) and immunohistochemical (IHC) analyses were used to characterize JMJD6 protein expression and spatial distribution in normal placental development and in placentae from preeclamptic pregnancies. WB and immunofluorescence (IF) analyses of JMJD6 were performed in choriocarcinoma JEG3 cells maintained at 3% and 20% oxygen or treated with 2.5mM sodium nitroprusside (SNP, a nitric oxide donor). Established technology using RNAi was employed to silence JMJD6 in JEG3 cells, while gain-of-function studies were done using JMJD6 plasmid construct following WB for HIF-1 α and von Hippel Lindau (VHL) tumor suppressor protein, a negative regulator of HIF-1 α stability that targets HIF-1 α for proteasomal degradation.

Results: During early gestation, JMJD6 exhibited a temporal oxygen-dependent pattern of expression, whereby it was elevated at 7-9 weeks, followed by a marked decrease between 10-12 weeks. JMJD6 protein was strikingly increased in preeclamptic placentae relative to normotensive controls, concomitant with elevated HIF-1 α . *In vitro* treatment of JEG3 cells with

3% O₂ or SNP revealed not only an increase in JMJD6 protein (WB) but also enrichment within both the nucleoplasm and nucleoli (IF) when compared to cells maintained in 20% O₂. Interestingly, knockdown of JMJD6 resulted in increased HIF-1 α stability and this associated with decreased VHL expression. As well, JMJD6 overexpression resulted in enhanced VHL expression while reducing HIF-1 α stability.

Conclusions: In conclusion, our data signifies a novel role for JMJD6 as an oxygen sensor in the human placenta in physiological and pathological conditions. Altered JMJD6 function in preeclampsia may indirectly contribute to increased HIF-1 α stability by decreasing VHL expression.

Primary Category

for Abstract: Maternal-Fetal Medicine, Placental physiology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 9 08

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Status for First (ie Presenting) Author:

Presentation Oral

Preference:

Abstract Title: OVARIAN HIGH GRADE SEROUS CANCER XENOGRAPTS AS PRE-CLINICAL MODELS OF RESPONSE TO CHEMOTHERAPY

Abstract Keywords: serous ovarian cancer, models, chemotherapy, xenografts

Précis:

Patient-derived xenografts recapitulate patient response to chemotherapy and are able to prospectively identify chemo-sensitive/resistant patients.

Abstract:

Objective: Ovarian high-grade serous cancer (HGSC) is the most lethal gynecologic malignancy. Well-characterized models that reflect the biology of the tumour may improve outcomes for patients. Patient-derived xenografts (PDXs) recapitulate disease heterogeneity; however, to be useful in predicting response to novel chemotherapeutics, they must reflect the response of the donor tissue to standard chemotherapy. This study tested the ability of a PDX-model of HGSC to predict response to standard of care chemotherapeutics.

Methods: The mammary fat pads of NOD/*Scid*/IL2rg^{-/-} mice were injected with 10⁶ cancer cells from platinum sensitive (n=3), platinum resistant/refractory (n=13) and prospectively identified (n=2) patients. Once palpable (~200mm³), tumor-bearing mice were treated with carboplatin (75 mg/kg IP qweek x 2 doses) or vehicle (500 cc saline qweek x 2 doses). Tumor size was assessed every 72 hours. Serous histology was confirmed.

Result: Using RECIST criteria, PDX derived from platinum-sensitive patients showed a 77-90% reduction in tumor volume with platinum therapy. Platinum-resistant PDX showed at most a 30% reduction in tumor volume or grew in spite of platinum therapy. Two samples obtained prospectively showed a 60-90% reduction in tumor volume, corresponding to platinum sensitive patients. There was a 100% concordance between sample status (resistant/sensitive) and PDX-response to chemotherapy (response/no response).

Conclusion: PDXs recapitulate patient response to chemotherapy and are able to prospectively

identify chemo-sensitive patients, these data suggest that the PDX model allows for accurate identification of platinum sensitivity and resistance and may allow for the assessment of the efficacy of novel chemotherapeutics.

Funding: Department of Obstetrics & Gynecology; Walter J. Hannah Clinician Investigator award; Thomas Ryley Clinical Investigator Award

Primary Category Gynaecologic Oncology
for Abstract:

Secondary Ovarian Cancer
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 15 06

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Presenting) Author:

Presentation Oral
Preference:

Abstract Title: VEPH1 Modulation of TGF- β and Androgen Receptor Signaling: Evidence that VEPH1 Activity may be Regulated by Phosphorylation

Abstract Keywords: VEPH1, TGF- β , androgen receptor, ovarian cancer, phosphorylation

Précis:

VEPH1 is a phosphoprotein that alters TGF- β and androgen receptor signaling in a cell-specific manner that may be determined by its phosphorylation state.

Abstract:

Background: Transforming growth factor- β (TGF- β) is a pleiotropic cytokine that plays a critical role in development and tissue homeostasis. We and others have shown that androgens inhibit TGF- β signaling, which may impact development and could contribute to the etiology or progression of certain cancers, such as prostate and ovarian, by enabling damaged cells to escape the cytostatic effects of TGF- β . We have previously reported that *Ventricular zone expressed pleckstrin homology domain homolog 1 (VEPH1)*, which is amplified in ovarian cancer, is a potent inhibitor of canonical TGF- β and enhances androgen receptor (AR) signaling. However, these activities appear to be cell-context dependent. *In silico* analysis of VEPH1 reveals multiple

candidate serine, threonine, and tyrosine phosphorylation sites, raising the possibility that its activity is determined by its phosphorylation.

Objective: To determine if VEPH1 is differentially phosphorylated in cancer cells and whether this affects its impact on TGF- β and AR signaling.

Methods: ES2, HEY, and SKOV3 human ovarian cancer cells were transiently transfected with VEPH1 cDNA to determine its effect on TGF- β and AR signaling using reporter gene assays. Western blot analysis was performed to determine the expression level of endogenous and exogenous VEPH1 expression. Phosphorylation of VEPH1 was examined by Phos-Tag supplemented SDS-PAGE. Phosphosite-mutant VEPH1 was generated by site-directed mutagenesis.

Results: A survey of multiple cell lines indicates differential expression of VEPH1. HEY and ES2, but not SKOV3 ovarian cancer cells express endogenous VEPH1. Exogenous VEPH1 expression reduced TGF- β signaling in both SKOV3 and HEY cells, but not in ES2 cells. Reporter gene assays show that VEPH1 has differential effects on AR signaling in these three cell lines. While VEPH1 enhances AR signaling in SKOV3 cells, it inhibits signaling in HEY cells, and has no effect in ES2 cells. Phos-Tag supplemented SDS-PAGE analysis of VEPH1 indicates VEPH1 is multi-phosphorylated to varying degrees in these cell lines. Reporter gene assays using cells expressing phospho-mutant VEPH1 have thus far excluded two phosphorylation sites in these differential effects on AR signaling. We are presently examining an additional six candidate phosphorylation sites and characterizing the precise phosphorylation status of VEPH1 in these cells by Mass Spectroscopy.

Conclusions: VEPH1 is a phosphoprotein that exhibits striking cell-specific differences in phosphorylation status that may underlie its cell-context specific effects on TGF- β and AR signaling.

Funded by: Canadian Institutes of Health Research

Primary Category for Abstract: Gynaecologic Oncology

Secondary Category for Abstract: Ovarian cancer

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 42 07

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Presentation Preference: No Preference

Abstract Title: Human Umbilical Cord Perivascular Cells: Novel Candidates for Post Infarct Cellular Therapy

Abstract Keywords: Umbilical cord, perivascular cells, MSC, stem cell, cardiovascular regeneration

Précis:

Précis: Our *in vitro* assays suggest, that human umbilical cord derived PVCs are promising candidates for cellular therapy post-myocardial infarction.

Abstract:

Objective: Myocardial infarction (MI) leads to loss of cardiac muscle, decreased cardiac output and potential mortality. Cell therapy has great potential as non-invasive, early and/or late therapeutic modality in comparison to heart transplantation. However, a safe and efficient cell type for cardiac repair has yet to be identified. Our aim was to determine whether human umbilical cord-derived perivascular cells from the first trimester (FTM-PVC) and term (TERM-PVC) are good candidates for cardiac tissue regeneration based on their (1) ability to functionally integrate into cardiomyocyte cultures, (2) *in vitro* cardiomyocyte differentiation capacity and (3) immunoprivilege properties.

Methods: All experiments were conducted with REB approval and following CACC guidelines. At least 3 independent lines of FTM and TERM-PVCs were used and compared to bone marrow MSCs (BM-MSC). Aggregates were formed using hanging drop method. FTM- and TERM-PVCs were directly co-cultured with primary rodent or human iPS derived cardiomyocytes or exposed to rat cardiomyocyte conditioned media for up to 2 weeks. Phenotypic changes were evaluated by immunocytochemistry or flow cytometry for the cardiac markers SIRPA, Mef2c and cardiac troponin T (cTnT) and the immunoprivilege molecule, HLA-G, as well as the immunogenic molecule HLA-A. Human cells were distinguished and sorted from rat cardiomyocyte co-cultures using TRA-1-85.

Results: When co-cultured with cardiomyocytes, both FTM- and TERM-PVCs upregulated the expression of all cardiac lineage markers tested; Mef2c (>50%), cardiac troponin T (>50%) and SIRPA (FTM 49% + 12%, term 52% ± 6%), and both cell types formed connexin43 containing gap junctions within 2 weeks. On cardiomyocyte feeders, FTM-PVC, but not TERM-PVC aggregates differentiated into spontaneously contracting cells within 2 weeks. Both FTM and TERM-PVCs expressed HLA-G and maintained their level of expression during differentiation (FTM 23.8% ± 6%, term 21% ± 5%), while the level of HLA-A remained significantly lower in both FTM- (49% + 9%) and TERM-PVCs (57,8% ± 11%) when compared to BM-MSCs (91% + 6%) or iPS derived cardiomyocytes (>95%). Both types of PVCs, when in direct co-culture,

upregulated cardiac markers significantly more than those cultured in cardiomyocyte conditioned media (SIRPA

Conclusions: These studies suggest that both FTM and TERM-PVCs differentiate towards the cardiac lineage with higher efficiency than BM-MSCs *in vitro* and both retain beneficial immunological properties. However, only FTM-PVCs formed spontaneously contracting cells utilizing this assay. While both cells types upregulated cardiac marker expression in cardiomyocyte-conditioned media, direct cell-cell interactions with rat cardiomyocytes had a more prominent cardiomyogenic induction effect on both PVC cell types.

Primary Category Stem Cell Biology

for Abstract:

Secondary Cardiovascular Disease

Category for

Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Presentation Preference:

Clinical Fellow

Oral

Abstract Title: Bedside Rounding and Ward Task List Use in Gynaecology

Abstract Keywords: health care quality, gynaecology, communication, efficiency, patient satisfaction

Précis:

Patient-centred multidisciplinary morning bedside rounds combined with a ward task list reduces trainee interruptions, increases ward efficiency and positively impacts patient satisfaction.

Abstract:

Objective: To determine if morning bedside patient-centred rounds by house staff alongside the charge nurse, in conjunction with a ward task list, reduces trainee interruptions, impacts patient satisfaction and leads to earlier patient discharge from hospital.

Methods: In this pre- and post-intervention study, patients admitted to the gynaecology ward at St. Michael's Hospital from September 30, 2013 to November 10, 2013 (6 weeks) received routine care. From November 11, 2013 to December 22, 2013 (6 weeks), care plans were completed during morning house staff rounding. Fellows or the chief resident rounded formally with the charge nurse, reviewed care plans at the bedside and subsequently left care plans at the bedside in a covered clipboard. Nurses recorded non-urgent issues on a ward task list instead of paging residents and the task list was checked between operating room cases. During both periods, the number and acuity of resident pages was recorded. Patients completed satisfaction questionnaires based on National Research Corporation (NRC) Picker questions and discharge times were noted.

Results: There were 89 admissions during the first 6 weeks and 104 admissions during the intervention phase. While not statistically significant, there was a trend toward fewer nights in hospital in the intervention group (2.1 ± 1.6 nights vs. 1.6 ± 0.8 nights, $p = 0.06$). Mean discharge time after introducing multidisciplinary rounds and the task list was significantly earlier ($12:37 \pm 2\text{h } 37\text{m}$ vs. $11:18 \pm 1\text{h } 59\text{m}$, $p < 0.001$) with the rate of discharge before 11am almost doubling (36.0% vs. 69.3%). Satisfaction surveys were completed by 174/193 patients (90.2%) over the 3-month study period. Most patients completing the survey during the intervention phase found bedside care plans helpful (86/94 patients, 91.5%). There was improvement in all NRC Picker responses during the intervention period with the biggest gains in patient trust in health care providers and patients' perceptions regarding input into their treatment. Resident pages during the intervention period decreased three-fold (142 vs. 41) with fewer interruptions during operations (37 vs. 6). The biggest decline was seen in 'non-urgent' pages (124 vs. 20) whereas the number of 'non-urgent but time-sensitive' (14 vs. 15) and 'urgent' (4 vs. 6) pages were similar.

Conclusions: Including a brief set of bedside rounds involving house staff alongside the ward charge nurse, in conjunction with a ward task list, reduces interruptions of trainees and positively impacts patient satisfaction while improving the rate of discharge before 11am.

Primary Category

for Abstract: Health Care Delivery, Health Care Quality

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 12 014

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Status for First (ie Presenting) Author:

Presentation Preference: Oral

Abstract Title: What is the Effect of Social Inequality on Preterm Birth? Evidence from the U.K. Millennium Cohort Study.

Abstract Keywords: preterm birth, socioeconomic status, social determinants of health

Précis:

Women living with household unemployment or poor social support experienced higher risk of preterm birth in a large U.K. birth cohort.

Abstract:

Objective: Preterm birth is a worldwide health problem. Premature infants are at risk of lifelong neurodevelopmental, behavioural, and chronic disease sequelae. Despite advances in perinatal care, a social gradient persists in the distribution of preterm birth that places disadvantaged women at higher risk. Our aim was to examine the association between social inequality and preterm birth. We tested whether different effects exist between the material and psychosocial explanations of health inequality and tested for effect interaction with health-related behaviours, conditions of pregnancy and delivery, and pregnancy complications.

Methods: This study was a retrospective analysis of survey and linked hospital episode data from 16,886 women giving birth to singletons in the U.K. who were included in wave 1 (2000-2002) of the Millennium Cohort Study. Preterm birth was the main outcome and defined as delivery between 24 weeks and 36 weeks, 6 days gestation. Social inequality was operationalized with material indicators (household income, housing tenure, perceived neighbourhood deprivation) and psychosocial indicators (education, occupational class, employment, social support). Analysis used nested multivariate logistic regression to assess odds of preterm birth, adjusting for maternal demographics, baseline health and health-related behaviours, pregnancy and delivery conditions, and pregnancy complications.

Results: Initial univariate analysis suggested associations between preterm birth and household income, housing tenure, perceived neighbourhood deprivation, and education. These effects were largely explained by adjustment for other social determinants in multivariate models. Following full adjustment, unemployment (OR=1.43, 95%CI: 1.02-2.01, p=0.039) and one indicator of poor social support (OR=1.20, 95%CI: 1.03-1.39, p=0.021) were associated with increased odds of preterm birth.

Conclusions: A growing body of evidence shows that social inequality has deleterious effects on pregnancy. Preterm infants born into low socioeconomic settings are doubly disadvantaged; the health challenges associated with prematurity are compounded by ongoing social inequality across the lifecourse. In this study, unemployment and poor social support were associated with increased odds of preterm birth, supporting the hypothesis that poor psychosocial circumstances place women at higher risk of this leading cause of perinatal morbidity and mortality. Social inequality and the effects of material and psychosocial determinants must be addressed in order to embrace a comprehensive solution to preterm birth.

Primary Category for Abstract: Global Women's Health

Secondary Category for Abstract: Preterm Birth

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Status for First (ie Presenting) Author:

Presentation Preference: Oral

Abstract Title: Unfractionated Heparin, Placental Ultrasound and Placental Histopathology: Secondary analysis of a pilot randomized controlled trial

Abstract Keywords: unfractionated heparin, placental insufficiency, placental thrombosis, placental ultrasound, placental histopathology, placental anticoagulant, maternal vascular underperfusion

Précis:

Administration of heparin to women with evidence of uteroplacental insufficiency did not prevent thrombotic injury of placental villous tissues as determined by ultrasound or histopathology

Abstract:

Objective: Heparin is prescribed during pregnancy with the intention of improving perinatal outcomes on the basis that it exerts an anticoagulant action in the inter-villous space. Accumulating *in-vitro* and *in-vivo* evidence indicates that heparin's beneficial effects in pregnancy may result from 'non-anticoagulant' effects including the promotion of angiogenesis. The primary objective of this study was to determine the effect of antenatal administration of heparin within the placenta of women with second-trimester evidence of placental insufficiency. The secondary objective was to determine the test characteristics of second- and third trimester placental ultrasound in predicting placental histopathological lesions and adverse pregnancy outcomes.

Methods: This study was a secondary analysis of a pilot randomized controlled trial where 32 women with negative thrombophilia screens and second-trimester evidence of placental insufficiency were randomized to standard care or antenatal self-administration of unfractionated heparin (UFH) 7500IU twice-daily from the time of recruitment (18+0 to 23+6 weeks of gestation) to 34 completed weeks of gestation or delivery, whichever occurred first. Serial antenatal placental ultrasound images were reviewed independently by two reviewers and compared with findings on placental histopathology following delivery.

Results: There were no differences between the two trial arms in either the evolution of placental thrombotic lesions on ultrasound [progression 4/16 vs. 3/16, regression 2/16 vs. 1/16, no change 10/16 vs. 12/16 ($p=0.75$)] or evidence of maternal vascular under-perfusion on histopathology [6/16 vs. 7/15, $p=0.60$]. The early second-trimester ultrasound had better sensitivity for predicting placental lesions (sensitivity = 76.9% for lesions secondary to maternal vascular under-perfusion and 75% for any placental lesion) and adverse pregnancy outcomes (sensitivity = 77.8%) when compared with the last ultrasound before delivery (sensitivity = 61.5%, 50% and 51.9% respectively).

Conclusions: Antenatal administration of UFH did not prevent thrombotic injury of the placental villous tissues as determined by serial antenatal ultrasound and post-delivery placental histopathology. Second-trimester ultrasound that reflects developmental pathology had better sensitivity for predicting adverse pregnancy outcomes than third-trimester ultrasound that merely detects evidence of thrombotic injury. These findings support redirecting pregnancy research into the non-anticoagulant actions of heparin and developing more sensitive second-trimester ultrasound markers to predict adverse pregnancy outcomes.

Funding: Rose Torno Chair, Mount Sinai Hospital to Dr. JCP Kingdom

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Placenta
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 36 013

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Presentation Oral
Preference:

Abstract Title: Clinical Risk Factors and Whole Blood Gene Expression Predictive of Preterm Birth in Asymptomatic Women in Calgary

Abstract Keywords: Preterm Birth, Microarray, Diagnostic, Prediction, Clinical Risk Factors, Pregnancy,

Précis:

Whole blood gene signatures coupled with clinical variables have improved predictive efficacies to identify subsequent PTB in low risk, asymptomatic women in Calgary

Abstract:

Objective: The All Our Babies Study, a community based longitudinal low-risk pregnancy cohort study in Calgary, was established to investigate the role and interplay of genetics and environment that may contribute to preterm birth (PTB). The aim of this current study was to investigate whole blood gene expressions at 17-23 weeks (sampling time point 1, T₁) and/or 27-33 weeks of gestation (sampling time point 2, T₂) predictive of PTB.

Methods: Pregnant women over 18 years of age were recruited. Blood was collected and total RNA was extracted using PAXgene™ blood RNA Kits. A total of 326 samples from 165 women (51 PTBs and 114 term deliveries) were selected for microarray analyses. Microarray data were normalised and analysed using RMA and *Limma*; clinical variables were analysed using Student's *t*, Chi-squared or Fisher's test.

Results: The final clinical baseline model (logistic regression, stepwise) to predict PTB consisted of history of abortion ($p=0.001$), history of PTB ($p=0.036$), anaemia ($p=0.005$), vaginal haemorrhage ($p=0.014$) and urinary tract infection ($p=0.015$). Using binary logistic regression, the clinical baseline model to predict PTB had 41.2% sensitivity and 91.2% specificity (ROC AUC = 0.793).

Four models (with clinical baseline models incorporated) were built using binomial logistic regression to predict PTB. Model A consisted of five genes (*ATAD3A*, *VNN1*, *ABT1*, *GRWD1* and *PCDHGA12*); has a ROC AUC of 0.945; and predicts PTB at T₁ with 70.6% sensitivity and 88.6% specificity. Model B represented genes predictive of PTB at T₂ (*NEAT1*, *MIR601*, *RPH3A*, *CST13P*, *LOC284561*, *EEF1D*, *CD63* and *EBAG9*); produced a ROC AUC of 0.984; with 78.7% sensitivity and 92.1% specificity. Model C represented genes (*FPR3*, *MIR3612*, *UPF2*, *SNORD91A* and *LOC100506882*) that display temporal differences between T₁ and T₂ that are predictive of PTB (i.e. $Y = \Delta T + X$; where ΔT represents temporal differences of genes between T₁ and T₂ and X represents clinical variables; ROC AUC=0.960, 76.6% sensitivity and 91.2% specificity). Model D consisted of genes (*MIR3612*, *ANO10*, *RPL13AP3* and *LOC100128908*) that display temporal difference between T₁ and T₂ after adjusting for baseline expression at T₁ that are predictive of PTB (i.e. $Y = \Delta T + T_1 + X$) with ROC AUC of 0.897, 57.5% sensitivity and 89.5% specificity.

Conclusion: Whole blood gene signatures coupled with clinical variables have improved predictive efficacies to identify subsequent PTB in low risk, asymptomatic women in Calgary.

Primary Category Obstetrics
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Status for First (ie Presenting) Author:

Presentation Preference: No Preference

Abstract Title: Site-specific Increases in Utero- and Feto-placental Arterial Vascular Resistance in eNOS Deficient Mice Due to Impaired Arterial Enlargement

Abstract Keywords: endothelial NO synthase, placenta, uteroplacental circulation, fetoplacental circulation, hemodynamics, vascular resistance, micro-computed tomography, mouse

Précis:

Site-specific impairments in utero- and fetoplacental arterial enlargement lead to elevations in uteroplacental and fetoplacental arterial vascular resistances in eNOS deficient mice.

Abstract:

Objective: The specific vascular abnormalities causing reduced umbilical and uterine artery blood flows in pathological pregnancies are not well understood. However, rarefied fetoplacental arterioles and/or capillaries are suspect in intrauterine growth restricted placentas and reduced spiral artery enlargement is thought to underlie resistance elevations in preeclampsia. The objective of this study was to identify the changes in placental vascular geometry that account for observed reductions in uterine (-55%) and umbilical artery blood flows (-29%) in a growth restricted mouse model lacking endothelial nitric oxide synthase (eNOS KO).

Methods: Uteroplacental and fetoplacental arterial vascular trees of pregnant mice near term were perfused with X-ray contrast agent. Specimens were then imaged using 3D, high-resolution X-ray micro-computed tomography (n=5-10 placentas obtained from 3-5 dams/group). Images were segmented to quantify tree geometry. Flow modeling calculations using standard formulas for resistances in series and parallel were performed to determine vascular resistance.

Results: Remarkably, in both control and eNOS KO trees ~ 90% of total uteroplacental vascular resistance was located in the radial arteries. Changes in eNOS KO uteroplacental vessel geometry, including 30% reductions in uterine, radial, and spiral artery diameters, were predicted to increase total uteroplacental arterial resistance downstream of the uterine artery by 2.3 fold compared to controls. Despite large reductions in volume of eNOS KO spiral arteries (-55%) and maternal canals (-67%), these segments were relatively minor contributors to resistance. In the eNOS KO

fetoplacental arterial tree, the number of small diameter (50-75 μm) vessels was increased by 26%. This would intuitively suggest a decrease in vascular resistance. However, modeling revealed a modest resistance increase (+19%), which was due, at least in part, to a 7-9% diameter reduction of smaller vessels (70-120 μm) located near the periphery of the tree.

Conclusions: Our findings demonstrate that eNOS has a critical role in both vessel enlargement and vascular arborization of the uteroplacental and fetoplacental circulations. Novel localization of resistance changes to specific vessels within the placental vascular network, enabled by quantitative 3D micro-CT data, advances our understanding of how vascular geometry affects placental hemodynamic function. Further, the novel finding that ~90% of uteroplacental vascular resistance in mice lies upstream of the spiral arteries could challenge existing dogma on the relative importance of spiral artery remodeling in normal and pathological human pregnancies.

Funded by: Heart and Stroke Foundation of Ontario, CIHR

Primary Category Obstetrics

for Abstract:

Secondary Placental Vasculature

Category for

Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 47

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**University of
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Presentation
Preference:**

Clinical Fellow

Oral

Abstract Title:

Validation of a Comprehensive Evidence-Based Laparoscopy Curriculum for Gynecology Residents

Abstract Keywords:

Gynecology, Laparoscopy, Resident Education, Simulation, Surgical Curriculum

Précis:

Junior resident participation in a comprehensive simulation-based training curriculum for gynecologic laparoscopy improves knowledge and technical performance compared with conventional residency training.

Abstract:

Objective: Residency programs struggle with integrating simulation training into curricula despite evidence that simulation leads to improved operating room performance and patient outcomes. Currently there is no standardized laparoscopic training program available for gynecology residents. Our objective was to validate a standardized evidenced-based laparoscopy curriculum for gynecology residents using objectively measured performance in a simulated environment as well as in the operating room.

Methods: This prospective, single-blinded randomized control trial allocated postgraduate year 1 and 2 gynecology residents to receive either conventional residency training or an evidence-based comprehensive training curriculum for gynecologic laparoscopy. The curriculum consisted of cognitive, technical and non-technical skills components. Outcome measures included

performance in multiple-choice questions (MCQ), technical performance in a simulated environment (box trainer and virtual reality (VR) simulator tasks), as well as technical procedure scores at laparoscopic salpingectomy as judged by two blinded observers.

Results: Twenty-seven residents were randomized (14 curriculum, 13 conventional) and completed baseline and post curriculum testing. Both groups were similar at baseline testing based on MCQ and technical simulation scores. 24 residents (13 curriculum, 11 conventional) completed the surgical procedure assessment. Curriculum-trained residents scored higher on the cognitive MCQ (10 [9-10] versus 7 [6-9], $p = 0.000$) and the non-technical skills MCQ (11 [11-12] versus 9 [9-11], $p = 0.016$). Curriculum-trained residents outperformed conventionally trained residents at intra-corporeal knot tying (knot completion time 185s [132s-222s] versus 600s [394s-600s], $p = 0.000$). All students in the curriculum group demonstrated a statistically significant technical improvement on VR tasks ($p < 0.05$) as measured by the paired t-test.

Conclusion: Participation in a comprehensive simulation-based training curriculum for gynecologic laparoscopy improves knowledge and technical performance compared with conventional residency training.

Primary Category

for Abstract: Education, Gynecology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

POSTER ABSTRACTS

Abstract - ID: 3 **A3**

Author(s): Ummi Habiba (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Toronto Trainee Resident

Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Treatment of low-risk GTN with biweekly Actinomycin-D

Abstract Keywords: GTN, Actinomycin D, treatment

Précis:

Act-D performed well, including in patients with WHO score of 5-6 and the results were comparable to those published in an RCT.

Abstract:

Objectives: Biweekly ‘pulsed’ actinomycin-D (act-D) for the treatment of low-risk gestational trophoblastic neoplasia (GTN) has been shown to be superior to weekly methotrexate in terms of achieving a complete response in a randomized controlled trial (RCT). However, results from RCTs do not always translate into the ‘real-world’ setting. We endeavored to evaluate the performance of act-D in our institution, and to document the rate of complete response in patients with WHO scores of 5-6 and in those with high pre-treatment bHCG levels.

Methods: All patients with low-risk GTN (WHO score 0-6) requiring chemotherapy and treated at our institution from 2000 to 2012 were identified from the chemotherapy database. Those patients who received first-line act-D, 1.25mg/m² IV every 14 days were eligible, and cases were reviewed after receiving IRB approval. Demographics, such as age and FIGO score, treatment details, such as number of cycles of chemotherapy required to achieve a bHCG of zero and number of consolidation cycles, and outcomes, such as treatment failure and recurrence were extracted from the electronic medical record.

Results: Forty-four patients were eligible. Mean age of the cohort was 33 years (range 20-49 years) and mean pre-treatment bHCG level was 21,995 mIU/ml (range 12-172,045 mIU/ml). Six patients had a pre-treatment bHCG level of >50,000 mIU/ml. Median WHO score for the cohort was 3 (mean 2.6), and four patients had a WHO score of 5 or 6. The rate of complete response with act-D first-line therapy was 86.4% (38 of 44 patients). Six out of 44 patients (13.6%) experienced a treatment failure and were treated with second-line chemotherapy. The rate of treatment failure in

patients with high bHCG levels (1/6, 16.7%) and in patients with WHO scores of 5-6 (0/4, 0%) was not significantly different from the rate in the cohort overall ($p=0.99$, Fisher's exact test). At a median follow-up of 12 months, 2 of 44 patients (4.5%) experienced a relapse after achieving a bHCG of zero. One of these patients had an initial WHO score of 6 and bHCG of 261 mIU/ml; the other had a WHO score of 4 and bHCG of 21 mIU/ml. All patients were eventually cured.

Conclusions: Act-D performed well in our institution, including in patients with high bHCG level or WHO score of 5-6. Results were comparable to those published in an RCT.

Primary Category Gynaecology
for Abstract:

Secondary GTN
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 19 A4

Author(s): Adrienne Li (**Presenter**), Department of Obstetrics and Gynaecology,
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Toronto

University of Resident
Toronto Trainee
Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Female Genital Tract Graft-vs.-Host Disease (GVHD): A Current
Retrospective Patient Review

Abstract Keywords: graft-vs.-host-disease, vulvovaginal, vaginal, female genital tract

Précis:

Female genital graft-vs-host-disease is an under-recognized complication following hematopoietic stem cell transplantation. Education of patients and clinicians and early, regular gynaecologic examinations are crucial.

Abstract:

Objective: Graft-vs.-host disease (GVHD) is a complex, T cell-mediated complication following hematopoietic stem cell transplantation. The aim of this study is to provide an up-to-date review of the literature regarding female genital tract GVHD and to describe our experience in a tertiary healthcare centre.

Methods: A current literature review and retrospective hospital chart analysis of patients referred to a specialized Menopause clinic in a tertiary healthcare centre were performed.

Results: A total of 44 articles was identified, comprised of 8 reviews and guidelines, 3 observational studies, 4 retrospective studies, 20 case series and reports, and 9 posters. The incidence of female genital GVHD ranged from 7% to 49%, with most developing this complication more than 100 days after transplantation. Risk factors were stem cells from peripheral blood progenitor cells and chronic GVHD of other organs. Common symptoms were vulvar pain and pruritis and inability to have penetrative sex. Examination findings were similar to lichen planus, such as: vulvar erythema and ulcers; labial fusion; narrowed introitus; and vaginal scarring, adhesions, and stenosis. Medical treatment options were topical and/or systemic immunosuppressants and estrogen, topical corticosteroids, vaginal dilators, and regular intercourse. Surgery was reserved for the most severe cases.

In our tertiary healthcare centre, 23 patients have been followed for female genital GVHD. Twenty had GVHD affecting other organs (90.1%). The most common complaints included vaginal dryness (n=20, 86.9%) and dyspareunia (n=19, 82.6%). The most common findings were vulvar adhesions (n=12, 52.2%), followed by vaginal adhesions (n=11, 47.8%) and vulvar ulcers (n=10, 43.5%). One patient with hematocolpos required surgical management.

Conclusions: Female genital GVHD remains under-recognized and poorly understood. Education of patients and clinicians and early, regular gynaecologic examinations are crucial to the identification, treatment, and prevention of progression of female genital GVHD. All patients should be followed in a dedicated centre to improve the quality of care.

Primary Category Gynaecology
for Abstract:

Secondary Vulvovaginal
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 41 A2

Author(s): Daniel Margel (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Clinical Fellow
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Status for First (ie
Presenting) Author:

Presentation Oral
Preference:

Abstract Title: Prevention of reformation of intra uterine adhesions following lysis of adhesions and septoplasty: A retrospective review

Abstract Keywords: Hysteroscopy, adhesions, septum

Précis:

This work-in-progress aims to determine if the rate of intrauterine adhesion formation can be lowered with the use of post-operative medical treatment and/or physical barriers

Abstract:

Objectives: The objective of this study is to compare the rate of reformation of intrauterine adhesions (IUAs) in women who have undergone hysteroscopic septoplasty or lysis of synechiae who had post-operative treatment with hormonal therapy, physical barriers or antibiotic administration to those who did not receive post-operative treatment.

Our secondary objective is to compare pregnancy and live birth rates between the groups.

Methods: A retrospective cohort study will be conducted of all patients undergoing hysteroscopic septoplasty or hysteroscopic lysis of synechiae from June 2000 to June 2012 at Sunnybrook Health Sciences Centre. Patients' operative record/hospital chart will be reviewed to collect data on baseline demographics and operative characteristics including the type of device used (electrocautery or mechanical scissors) and the type of post-operative treatment used (ie. nothing, antibiotic prophylaxis, physical barriers or hormonal therapy). Our primary outcome, rate of reformation of IUAs, will be determined based on the presence of IUAs on post-operative imaging with either sonohysterogram or hysterosalpingogram obtained from office or hospital charts. Our secondary outcome will be pregnancy rate (defined as the participant identifying a pregnancy occurring on self-administered questionnaire or by hospital record/office chart) and live birth rate (defined as birth of a live infant greater than 24 weeks gestational age as identified by the patient on self-administered questionnaire or by hospital record/office chart). Unadjusted statistical analysis will be performed using the chi square test. We will compare the rate of reformation of IUAs post-operatively between those subjects treated with any method to those who were not treated with adhesion prevention techniques. Next, Logistic Regression will be used to adjust for potential confounders such as age, extent of pre-operative adhesions/size of septum, surgical method utilized (mechanical versus electrocautery) and type of post-operative treatment (mechanical barrier, antibiotic prophylaxis or hormonal therapy).

Results: This is a work in progress and results are pending.

Conclusions: We hope to determine if the rate of intrauterine adhesion formation after hysteroscopic septoplasty or lysis of synechiae is lower after postoperative treatment with either hormonal therapy, physical barriers and/or antibiotic treatment.

Primary Category Gynaecology
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 67 A1

Author(s): Katherine LePage (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Toronto Trainee Status for First (ie Presenting) Author: Medical Student

Presentation Preference: Oral

Abstract Title: What Do Patients Want? A Needs Assessment of Vulvodynia Patients Attending a Vulvar Diseases Clinic.

Abstract Keywords: needs assessment, vulvar diseases, vulvodynia, pain

Précis:

Patients with vulvodynia face significant psychosocial challenges related to their condition that are not addressed in the current care model at the Vulvar Diseases Clinic.

Abstract:

Objective: Vulvodynia is a condition of chronic pain affecting the vulvar region. At Women's College Hospital (WCH), patients with vulvodynia are managed within the scope of the Vulvar Diseases Clinic. The goal of this study was to characterize needs specific to vulvodynia patients that are not addressed using the current model of care in this clinic.

Methods: Patients with an established diagnosis of vulvodynia were recruited from the Vulvar Diseases Clinic. Each participant provided demographic information with a self-administered questionnaire, and completed a semi-structured interview which was audio-recorded and subsequently transcribed. Two reviewers independently performed descriptive qualitative analysis using the interview transcripts in order to derive codes and develop overarching themes.

Results: Semi-structured interviews were conducted with participants 22 to 64 years of age. Among the many challenges related to vulvodynia that were identified, most fall under three main themes: the hurdles related to establishing and understanding the diagnosis, the emotional impact of vulvodynia, and the profound effect of the condition on relationships with intimate partners. In the context of these challenges, participants provided input regarding programs that are not currently offered, but should be considered in order to provide more holistic and effective vulvodynia care. Among these, sex therapy with a thorough explanation of vulvodynia for patients' partners, on-site pelvic floor physiotherapy, introductory vulvodynia classes, online peer support groups, and alternative pain management teaching were some recommendations. Furthermore, the participants stressed the importance of raising awareness of the condition both within the medical profession as well as among the general public, in order to facilitate early diagnosis and effective management of vulvodynia.

Conclusion: Participants in this study identified major challenges related to establishing their diagnosis, the emotional effects of the condition, and the strain on relationships with intimate

partners. This study highlights the complexity of vulvodynia as a condition with important emotional and social ramifications. In order to provide holistic care for individuals with vulvodynia, coordination of additional services that can address these needs is imperative. The insights gained through this study will ultimately help to inform the design of more effective multidisciplinary programs for vulvodynia care both at Women's College Hospital and at other gynecological centres across Canada.

Primary Category Gynaecology
for Abstract:

Secondary Vulvodynia
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 51 A5

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University of Toronto Trainee Status for First (ie Presenting) Author: Undergraduate student

Presentation Preference: Poster

Abstract Title: Follicular Fluid Exosomes and Exosomes Secreted by Granulosa Cells In Vitro: A Potentially Important Mechanism for Intra-Follicular Communication

Abstract Keywords: cell communication, exosomes, follicular fluid, granulosa luteinized cells, human

Précis:

Exosomes were isolated and enriched from follicular fluid and GLC-conditioned media using ultracentrifugation and commercial kits. They were characterized using biochemical and cell imaging techniques.

Abstract:

Objective: Follicular fluid (FF) provides part of the microenvironment that regulates oocyte development and may play a critical role in oocyte fertilization and embryo development. Intercellular signaling between granulosa luteinized cells (GLC), cumulus cells (CM), and the oocyte is required for proper folliculogenesis, ovulation, and hormonal secretion. Exosomes are small (typically 30-100nm) membranous vesicles that contain a unique repertoire of proteins and microRNAs (miRNAs). They are found in various body fluids and tissues, and evidence suggests their involvement in transferring signals between cells. We hypothesize that exosomes may mediate intercellular signaling within ovarian follicles. Our aim was to isolate and characterize exosomes from human follicular fluid and exosomes secreted by granulosa cells *in vitro*, using a variety of biochemical and cell biology techniques.

Methods: This study had REB approval. Samples were obtained from 70 IVF patients. FF and GLC from individual mature size follicles (>18mm), from the left and right ovaries, were

collected, isolated, and stored at -80°C. Exosomes were isolated from both FF and GLC conditioned media using ultracentrifugation (UC) and exosome enrichment reagents (ExoQuick™ and ExoPure™ commercial kits). This was followed by immunoprecipitation with magnetic or latex beads targeting the exosome-specific markers, CD9, CD63, or CD81. Protein analyses involving western blotting and LC-MS/MS mass spectrometry were conducted to evaluate and compare the exosomal contents of the FF samples. The enriched exosome samples were further analyzed using transmission electron microscopy (TEM), scanning electron microscopy (SEM), fluorescence microscopy, and immunogold labeling.

Results: Exosomes enriched from FF using the two commercial kits, ExoPure™ and Exoquick™, yielded the same proteomic profile as ultracentrifugation (the gold standard method of exosome isolation and enrichment). Known exosomal markers (CD9, CD63 and CD81) were detected by both flow cytometry and western blot analyses of microvesicles that were immunoprecipitated from either FF or GLC-conditioned culture media. Electron and fluorescence microscopy confirmed that we had isolated exosomes from both FF and GLC-cultured media samples. SEM with immunogold labeling confirmed the expression of CD9 on immunoprecipitated exosomes from both FF and GLC-conditioned media.

Conclusion: Human follicular fluid contains exosomes, some of which may originate from GLCs. GLCs secrete exosomes when cultured *in vitro*. Exosomes from these sources can be isolated and enriched using a multitude of methods. We are currently performing proteomic analyses to determine if FF and GLC exosomes contain unique proteins, or have a unique protein profile that differs from other types of exosomes.

Primary Category

for Abstract: Gynecology, Female Fertility

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 13 B4

Author(s): Nicole Paterson (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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Arya Sharma, Other

University of Toronto Trainee Resident

Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Obesity and Infertility: A Health-Related Classification System, versus Body Mass Index, Better Predicts Pregnancy Rate in Overweight and Obese Women.

Abstract Keywords: infertility, obesity, body mass index, in-vitro fertilization

Précis:

A health-related obesity score, rather than BMI alone, better predicts clinical pregnancy rate after infertility treatments.

Abstract:

Objective:

The effect of weight on reproduction remains unclear. Although BMI serves as a simple classification system, it is not specific in its ability to measure the actual degree of excessive adiposity on an individual basis. This study assessed whether a health-related obesity classification system or body mass index (BMI) better predicts clinical pregnancy rate and live birth rate after fertility treatments.

Methods:

This was a prospective study of patients with BMI ≥ 25 who underwent fertility treatments. Treatments included ovulation induction, controlled ovarian stimulation with or without intrauterine insemination and in-vitro fertilization. An obesity-related health status assessment was performed using a modification of the 'Edmonton Obesity Staging System (EOSS)' (Sharma et al., 2005). Measurements included blood pressure, blood work (for glucose, lipid, liver and renal function) and assessment of their obesity related health history and functional status. The first treatment cycle after assessment was followed for clinical pregnancy outcome and live birth rate. An interim analysis of clinical pregnancy rate was performed.

Results:

To date 68 patients have been recruited for the study. Of those, 47 patients had pregnancy test results available for interim analysis. The mean age was 35.6 years (range 27-42). Just over half the treatment cycles were IVF. Overall mean clinical pregnancy rate was 21%. There was a trend for a lower BMI in those that achieved a pregnancy versus those that did not (31.4 versus 33.3, respectively), the difference was not statistically significant. However, the health related modified EOSS score was significantly lower in those that had a clinical pregnancy versus those that did not (1.2 versus 1.9, p

Conclusions:

The health-related obesity score (modified EOSS), rather than BMI alone, better predicts clinical pregnancy rate after infertility treatments. Live birth rate data awaits final study follow up. A more individualized risk assessment, which can be provided by the use of the modified EOSS classification, will assist patient counseling and management. With more accurate individualized prediction of potential reproductive outcomes, patients will be able to make more informed decisions about undergoing fertility treatments.

Reference:

Sharma, A.M. and Kushner, R.F., 2009. A proposed clinical staging system for obesity. *International journal of obesity (2005)*, **33**(3), pp. 289-295.

Funding Source:

Department of Obstetrics and Gynecology Mount Sinai Hospital/University Health Network research grant.

Primary Category Infertility
for Abstract:

Secondary Female infertility
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 37 B5

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Clinical Fellow

**University of
Toronto Trainee
Status for First (ie
Presenting) Author:**

Presentation Poster
Preference:

Abstract Title: Assisted Reproduction involving Surrogacy: An analysis of the Medical, Psychosocial and Legal Issues from a large Canadian Surrogacy program.

Abstract Keywords: surrogacy, assisted reproduction, gestational carriers, intended parents

Précis:

A largest series of surrogacy cases in Canada was analyzed. A coordinated multidisciplinary approach is necessary to achieve a successful surrogacy program.

Abstract:

Objective: Our aim was to review the medical, psychosocial and legal issues relating to assisted reproduction involving surrogacy in Canada.

Methods: A retrospective review of 333 consecutive surrogacy cycles from 1998 to 2012 involving 256 intended parents (IPs) and 247 gestational carriers (GCs) at the Create Fertility Centre, Toronto, Canada. Indications for surrogacy and pregnancy outcomes were analyzed. All IPs and GCs underwent independent medical assessments, psychosocial counselling and entered into a legal contract with each party receiving independent legal advice. A detailed description of the multidisciplinary approach will be presented.

Results: 178 pregnancies were achieved out of 333 cycles. The indications for a GC were divided into 2 groups. Those who “failed to carry” including recurrent implantation failure (RIF), recurrent pregnancy loss (RPL), and previous poor pregnancy outcome (n=96; 132 cycles; mean IP age 40.4 ± 2.9 ; pregnancy rate 50.4%). The second group consisted of those who “cannot carry” including severe Asherman's syndrome, uterine malformations/uterine agenesis, maternal medical diseases or use of potentially teratogenic medications (n=108, 139 cycles, mean age 35.9 ± 3.1 ; pregnancy rate 53.6%). There was no difference in pregnancy rate between these groups ($P=0.55$). A third group, same sex male couples and single men, were analyzed separately (n=52; mean IP age 38.5 ± 3.9 ; pregnancy rate 60.7%). In 49.2% of cycles autologous eggs were used and 50.8% of cycles involved donor eggs. Ongoing pregnancy rates per transfer (>20 weeks gestation) were different between these groups (36.6% vs. 49.1% respectively; $P=0.027$).

Conclusion: There are multiple medical indications for surrogacy. A meticulous multidisciplinary process involving coordinated legal input, counselling and medical care for both the IP and the GC, is necessary to achieve a successful surrogacy program.

Funding: The CReATe Fertility Centre

Primary Category Infertility
for Abstract:

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 40 B6

Author(s): Sonia Blanco Mejia (**Presenter**), Other
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E. Anne Claessens, Department of Obstetrics and Gynaecology, University of Toronto

University of Toronto Trainee Status for First (ie Presenting) Author: Other

Presentation Preference: Poster

Abstract Title: Pregnancy rates in poor-ovarian-response patients undergoing conventional IVF treatment supplemented with dehydroepiandrosterone and Coenzyme Q10.

Abstract Keywords: Poor ovarian response, IVF, DHEA, CoQ10, pregnancy rate, pregnancy loss rate, live birth rate

Précis:

Adding CoQ10 to DHEA in a retrospective cohort study of 189 conventional IVF treatment cycles did not show further benefit.

Abstract:

Objective: To analyze differences in pregnancy rate (PR), pregnancy loss rate (PLR) and live birth rate (LBR) in women with poor ovarian response (POR) undergoing conventional IVF treatment with additional dehydroepiandrosterone (DHEA) or DHEA+CoenzymeQ10 (DHEA+CoQ10).

Material and Methods: We conducted a retrospective cohort study (Feb 2006-Feb2014). We included women with POR as per the Bologna criteria. IVF cycles were performed using day 3 agonist flare protocol, a dose of 300-450 IU FSH per day and 10,000 IU of HCG when lead follicle was between 1.8-2.2 cm. Transvaginal ultrasounds for antral follicle count (AFC) and follicle size were performed during the monitoring period, as well as blood for hormone levels. PR per embryo transferred (PR/ET), PLR, and LBR/ET were determined. Equality of means was tested using two-sample t-test, Fisher's exact test was used to test for the association of categorical variables, statistical analyses were done using Stata version 11. Results are given in means (SD) for age, FSH and BMI, and in percentages (%) for cancellation rate, PR/ET, PLR, and LBR/ET. Statistical significance was set at p

Results: We included 118 women, 92 on DHEA and 26 on DHEA+CoQ10 who underwent a total of 198 IVF cycles. From those 198 IVF cycles, 150 were on DHEA (93 with Bologna criteria score of 2 and 57 with score of 3) and 48 were on DHEA+CoQ10 (33 with Bologna criteria score of 2 and 15 with score of 3). Baseline characteristics were no significantly different between the DHEA

and DHEA+CoQ10 groups, age 39.5(3.5) years vs. 40.1(2.2) years, $p=0.129$; FSH 10(4.9) mIU/ml vs. 11.1(7.2) mIU/ml, $p=0.115$; and BMI 23.9(3.6) kg/m² vs. 24.5(4.1) kg/m², $p=0.161$, respectively. Patients on the DHEA + CoQ10 group were taking DHEA for a longer period of time than the DHEA group (10.8[6.9] months vs. 7.3[5.1] months, p

Conclusion: The addition of CoQ10 to DHEA in women with POR undergoing conventional IVF treatment does not seem to have a beneficial effect over DHEA alone. The administration of DHEA to conventional IVF treatment resulted in an acceptable LBR/ET in this poor prognosis group of patients perhaps due to a lower PLR.

Primary Category Infertility
for Abstract:

Secondary Poor ovarian response
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 43 B3

Author(s): Claire Jones (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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Heather Shapiro, Department of Obstetrics and Gynaecology, University of Toronto

University of Clinical Fellow
Toronto Trainee
Status for First (ie
Presenting) Author:

Presentation No Preference
Preference:

Abstract Title: Effect of Endometrial Shedding with Medroxyprogesterone Acetate prior to Clomiphene Citrate in Oligo/An-ovulatory Women: a Pilot Study

Abstract Keywords: Ovulation Induction, Clomiphene Citrate, Oligomenorrhea, Amenorrhea, Infertility, Endometrium, Progestin

Précis:

A randomized control trial comparing pregnancy rates of oligomenorrheic women receiving medroxyprogesterone acetate or nothing prior to clomiphene citrate for ovulation induction appears feasible

Abstract:

Objective: The purpose of this pilot study is to evaluate the feasibility of successfully implementing a large randomized controlled trial comparing pregnancy rates of women randomized to random day 3 start of clomiphene citrate or a withdrawal bleed with medroxyprogesterone acetate prior to starting clomiphene citrate for ovulation induction at 2 university-affiliated fertility clinics.

Methods: This on-going pilot study is a prospective randomized control trial of women with infertility due to oligomenorrhea or amenorrhea with ethics approval from Mount Sinai Hospital and the University of Toronto. Following informed consent, women are randomized to random day 3 start of clomiphene citrate, or withdrawal bleed from medroxyprogesterone acetate 10mg daily for 10 days prior to starting clomiphene citrate. Subsequently, women undergo cycle monitoring with measurements of the endometrial lining as well as serum luteinizing hormone (LH) and estradiol levels starting day 12 of the cycle, every 1-2 days, until the time of LH surge or Ovidrel administration, at which time, they are instructed to have timed intercourse or intrauterine insemination. Beta- HCG levels are measured and pregnancy ultrasounds are performed at approximately 7 weeks gestation for women who are pregnant. For women who do not respond by day 21, they are either reassigned day 3 or restart MPA as per the arm of the study they are enrolled in, before beginning a higher dose of clomiphene citrate for a maximum of 3 cycles. Participants and nurses are asked to fill out a questionnaire during the study.

Results: Since July 2013, 12 patients have been enrolled into the study, with 6 in each arm. One patient dropped out of the study mid-cycle due to an unrelated trauma requiring emergency surgery, 1 dropped out after 2 cycles of no response to clomiphene citrate, and 3 patients are still ongoing study participants with 1 still awaiting her pregnancy test result, 1 just starting her cycle, and 1 pregnant but awaiting a pregnancy ultrasound. Of the 7 patients who have completed the study, there have been 3 pregnancies, but only 1 was a viable pregnancy on ultrasound. Enrollment into the study has taken longer than predicted, although both patient satisfaction and nursing satisfaction has been reported as high. Adherence to the study protocol has been excellent.

Conclusions: Thus far, the implementation of a large randomized control trial at 2 university-affiliated fertility centres has been feasible, although the study is still ongoing.

Funded by: Department of Obstetrics and Gynaecology, Mount Sinai Hospital

Primary Category Infertility
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 86 B1

Author(s): Nicole Zhang (**Presenter**), Department of Physiology, University of Toronto
University of Graduate Student
Toronto Trainee
Status for First (ie
Presenting) Author:

Presentation No Preference

Preference:

Abstract Title: Activity of E3 Ubiquitin Ligase MULE drives Early Oocyte Atresia and Premature Ovarian Failure

Abstract Keywords: Mule, Huw1, oocyte atresia, apoptosis, DNA damage, premature ovarian failure, primordial follicles

Précis:

Elucidating the role of Mule in primordial oocyte atresia

Abstract:

Activity of E3 Ubiquitin Ligase MULE drives Early Oocyte Atresia and Premature Ovarian Failure

Nicole Zhang^{1,2}, Zhenue Hao³, Tak Mak³ and Andrea Jurisicova^{1,2,4}

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Objective: Ubiquitylation is a mechanism by which proteins are targeted for degradation or other cellular fates. Since this process regulates cellular protein levels, it has the potential to affect a wide range of cellular and molecular interactions and signaling pathways. Mule (Mcl-1 Ubiquitin Ligase E3) is an effector of the ubiquitylation process responsible for the attachment of ubiquitin molecules onto targeted proteins. Mice with oocyte specific deletions of Mule do not breed and ovulation ceases altogether at seven weeks of age, signifying the atresia and depletion of the primordial follicular pool. In our studies, we aim to determine the role of Mule in early oocyte development and explore ovarian phenotypes of Mule deficient mice. **Methods:** Mice with oocyte specific deletion of Mule is obtained via ZP3^{Cre} mediated deletion. Ovaries from wildtype and conditional knockout mice were collected for follicle counts. Neonatal (day-4) ovaries were exposed to ionizing radiation and stained for Mule and markers of DNA damage. **Results:** Oocyte specific disruption of Mule causes lack of ovulation by 7 weeks of age with severely compromised ovarian reserve. Conditional knockout mice show decreased numbers of follicles at all stages of development compared to wildtype mice, particularly at the primordial stage. Expression of Mule and markers of DNA damage (p-gH2AX) are induced in primordial oocytes upon gamma irradiation, with highest levels occurring 4-6hr after exposure. **Conclusion:** lack of Mule results in destabilization of DNA repair pathways, and inadequate or untimely DNA repair then induces the activation of apoptotic pathways in primordial follicles, thereby depleting the ovarian reserve.

Primary Category Infertility
for Abstract:

Secondary Female infertility
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 83

B2

Author(s):

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**University of
Toronto Trainee
Status for First (ie
Presenting) Author:
Presentation
Preference:**

Graduate student

Poster

Abstract Title:

NANOPARTICLES ARE RELEASED FROM HUMAN PRE-IMPLANTATION EMBRYOS AND THEIR SHORT RNA CONTENT CORRELATES WITH EMBRYO MORPHOLOGY

Abstract Keywords:

Exosomes, Embryo, Embryo Culture Media, short RNA

Précis:

Nanoparticles are released from human pre-implantation embryos and their content correlates with embryo morphology.

Abstract:

Objective: The purpose of this project was to characterize exosomes released from human pre-implantation embryos grown *in vitro*, and correlate their short RNA content with embryo development.

Method: Embryos were cultured at 5% O₂ and 6% CO₂ in 30uL of Global media (LifeGlobal®) or CCM media (Vitrolife) for three or five days. For Electron Microscopy, embryos were fixed with 0.15% Gluteraldehyde, 4% Paraformaldehyde in PBS. Zona pellucida was removed using Tyrode Salt solution (Sigma). Zona permeabilization was achieved using 0.1% Tween-20 incubation for 10 minutes at room temperature. Embryos were incubated with CD9 primary antibody (1:200) for 1 hour, followed by immunogold labeling of secondary antibodies (1:250) for 40 minutes at room temperature. Spent embryo culture media was assessed for Small RNA concentration using the Total Exosome RNA and Protein Isolation Kit (Life Technologies), according to manufacturer's protocol. RNA concentration was determined using the NanoVue Plus Spectrophotometer (GE Healthcare Life Sciences). Each sample was read 3 times and the average of the three samples was used in analysis.

Results: Electron microscopy images show CD9 positive vesicles released from the membrane of day 3 embryos. Small RNA quantification suggests that there is a difference between the

amount of small RNA excreted into the culture media of embryos exhibiting good versus poor morphology. Preliminary data shows that small RNA concentration of day 3 embryos with good morphology is 25% higher than that of day 3 embryos with poor morphology. Similarly, small RNA concentration of day 5 embryos with good morphology is 31% higher than day 5 embryos with poor morphology.

Conclusion : Differences in morphology correlate with the relative amount of short RNA in embryo conditioned culture media from Day 3 and Day 5 embryos. Quantitation of microvesicular short RNA released from human embryos *in vitro* has the potential to become a new non-invasive method of embryo assessment for IVF.

Primary Category

for Abstract: Infertility, In-vitro fertilization

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Status for First (ie Presenting) Author:

Presentation Preference: No Preference

Abstract Title: Astrocyte-Derived Factors Increase Multidrug Resistance via P-glycoprotein at the Developing Blood-Brain Barrier

Abstract Keywords: fetal brain, blood-brain barrier, multidrug resistance, P-glycoprotein, tight junctions, brain endothelial cell, astrocyte

Précis:

Astrocyte-derived factors enhance tight junction and P-glycoprotein function in fetal and post-natal brain endothelial cells.

Abstract:

Objective: Brain endothelial cells (BECs) form a major component of the blood-brain barrier (BBB). These cells express high levels of the multidrug transporter P-glycoprotein (P-gp; encoded by Abcb1), which actively prevents the passage of xenobiotics into the fetal brain. P-gp levels in the BECs increase dramatically in late gestation and post-natal life. During this period, glial precursors differentiate into astrocytes and ensheath brain microvessels. However, the role of astrocytes in the modulation P-gp in the developing BBB is not known. In the present study, we hypothesized that factors produced by astrocytes positively regulate P-gp in the BECs during this critical phase of brain development.

Methods: Astrocytes and BECs were isolated from post-natal day 14 (PND14) guinea pigs. BECs were seeded on transwell inserts and astrocytes plated in the basolateral compartment. BECs were also cultured without astrocytes (mono-culture). Tight junction function of the BECs was monitored by measurement of transendothelial electrical resistance (TEER) and FITC-dextran tracer. P-gp activity was assessed using a calcein-AM fluorescence assay, and Abcb1 mRNA measured by RT-PCR (n=8). BECs were also cultured in astrocyte-conditioned media (ACM) and the same parameters were assessed (n=8).

Results: Co-culture of BECs with astrocytes increased TEER (p

Conclusions: Factors secreted by astrocytes have potent effects on Abcb1/P-gp expression and activity in BECs derived from the developing brain. These effects were only present for 24 hours in BECs exposed to ACM, suggesting that the secreted factors are labile. Astrocytes clearly play a

critical role in modulation of multidrug resistance at the developing BBB. As such, aberrations in astrocyte differentiation, seen in disorders such as autism and Retts Syndrome, may decrease P-gp function. This would allow increased transfer of P-gp substrates into the brain, many of which have negative neurodevelopmental consequences.

Funding: CIHR

Primary Category for Abstract: Maternal-Fetal Medicine

Secondary Category for Abstract: Brain development

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 29 C1

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Status for First (ie Presenting) Author:

Presentation Preference: Oral

Abstract Title: Fetal thrombocytopenia following parvovirus-B19 infection

Abstract Keywords: fetal, parvovirus, anemia, thrombocytopenia

Précis:

Severe fetal thrombocytopenia is common in cases of fetal HPV-B19 infection and may increase the risk for procedure-related fetal death.

Abstract:

Background: Fetal infection with parvo-B19 virus (HPV-B19) has been mainly reported to be associated with fetal anemia. Information regarding other hematological effects of HPV-B19 remains limited.

Objective: To assess the rate and consequences of severe fetal thrombocytopenia in pregnancies complicated by fetal HPV-B19 infection, and to identify factors that are predictive of severe thrombocytopenia in these pregnancies

Methods: Retrospective study of all pregnancies complicated by fetal HPV-B19 infection who underwent fetal blood sampling (FBS) in a single center during the years 1992-2013. The characteristics and outcome of cases with severe fetal thrombocytopenia ($=50 \times 10^9/L$ (control group)). Cases in which 3 consecutive FBS procedures were performed were analyzed to assess the natural history and rate of recovery of platelets concentration following HPV-B19 infection.

Results: Overall, 29 pregnancies complicated by fetal HPV-B19 infection who underwent FBS were identified. The rate of severe fetal thrombocytopenia was 37.9% (11/29). Case complicated by severe thrombocytopenia were characterized by lower hemoglobin concentration (25.6 ± 9.2 vs. 55.0 ± 36.0 g/L, $p=0.01$), lower reticulocytes count ($9.1 \pm 2.8\%$ vs. $17.3 \pm 10.6\%$, $p=0.02$), and lower gestational age at the time of diagnosis (21.4 ± 3.1 vs. 23.6 ± 2.2 weeks, $p=0.03$). Severe fetal thrombocytopenia was associated with a higher rate of fetal death within 48h following fetal blood sampling (27.3% vs 0% , $p=0.02$), and increased risk of prematurity (gestational age at delivery 32.9 ± 2.6 vs. 37.8 ± 2.8 weeks, $p=0.003$). Fetal thrombocytopenia was more common during the 2nd trimester but in some cases persisted along the 3rd trimester as well. The administration of RBC transfusion in cases complicated by fetal anemia resulted in a further mean decrease of $40.1 \pm 31.0\%$ in fetal platelets concentration due to a dilutional effect.

Conclusion: Severe fetal thrombocytopenia is a relatively common finding in cases of fetal HPV-B19 infection, which can be further worsened by the administration of RBC transfusion and may be associated with an increased risk for procedure-related fetal death following fetal blood sampling or RBC transfusion. Preparation and transfusion of platelets should be considered at the time of fetal blood sampling in pregnancies complicated with HPV-B19 infection, especially in the presence of the risk factors described above.

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Fetal infections
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 35 C3

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Status for First (ie
Presenting) Author:

Presentation No Preference
Preference:

Abstract Title: Twin Birth Study: incidence of caesarean delivery in induction of twin pregnancies

Abstract Keywords: Twin, Induction, Caesarean

Précis:

The induction method cannot be a predictor for a caesarean delivery in twin gestation.

Abstract:

Background The Twin Birth Study (TBS) demonstrated that planned vaginal birth, between 32 and 38 weeks gestation where the first twin was a cephalic presentation, results with no difference in fetal and neonatal outcomes compared to planned caesarean section. The TBS protocol included induction of labour for women in the planned vaginal delivery group if they reached 38 weeks of gestation undelivered. However, induction of labor can fail and lead to an unplanned caesarean delivery.

Objective To evaluate, by secondary analysis, predictive factors that led to caesarean deliveries comparing the two approaches for induction, prostaglandin (PG) versus amniotomy and/or oxytocin (no PG).

Method A total of 368 women were identified and included in the analysis. Of these women, 153 (41.5%) were induced using prostaglandins and 215 (58.5%) by amniotomy and/or oxytocin as an induction method. The following variables were evaluated: maternal age, parity, presentation of twin B, active labor to full dilatation interval, active labour to delivery interval, and country's perinatal mortality rate (PMR). Predictor variables were entered into a multiple logistic regress in a step-forward approach.

Results In total, 149/368 (40%) women underwent a caesarean delivery after induction of labour. The incidence in the two modes of induction was similar: 62/153 (40.5%) in the PG group and 87/215 (40.5%) in the no PG group. The following variables were significantly associated with the risk of delivery by a cesarean section: multiparity [OR 0.69 (0.57-0.83), $p < 0.0001$], maternal age ≥ 30 [OR 2.33 (1.48-3.68), $p = 0.0003$] and countries perinatal mortality rate ≥ 10 [OR 2.86 (1.74-4.72), $p < 0.0001$].

Conclusion Nulliparous women and women over the age of 30 years were more likely to be unsuccessful with induction of labor and require an unplanned cesarean delivery. In addition, a cesarean delivery after planned induction was more likely to occur in countries where the PMR is $\geq 10/1000$.

The method of induction, PG or no PG, had no effect on the incidence of cesarean delivery; the induction method cannot be a predictor for a caesarean delivery in twin gestation.

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Category for Abstract: Multiple gestation

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 68 C6

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University of Toronto Trainee Status for First (ie Presenting) Author: Graduate Student

Presentation Preference: Poster

Abstract Title: Hypoxia and Drug Transporter Expression in the Placenta and Fetal Liver: Influence of Antioxidants

Abstract Keywords: hypoxia, placenta, multidrug resistance, fetal liver, antioxidants

Précis:

Hypoxic pregnancy had little effect on drug transporter expression in the placenta, but caused a profound effect on *Abcb1a* (the predominant liver isoform encoding P-gp) in the fetal liver.

Abstract:

Objective: Drug transporters in the placenta, including P-glycoprotein (P-gp; encoded by *Abcb1*) and breast cancer resistance protein (BCRP; encoded by *Abcg2*), limit the passage of xenobiotics, teratogens, and certain hormones from the maternal to fetal circulation. In the liver, these transporters are important in transfer of factors into the bile for excretion. We have shown that oxygen tension regulates P-gp and BCRP expression in the human placenta, *in vitro*. However, the effects of hypoxic pregnancy on multidrug resistance in the placenta and fetal liver, *in vivo*, are not known. We hypothesized that hypoxia would increase P-gp and BCRP expression in the placenta and fetal liver, and that the antioxidant, vitamin C, would counteract these effects.

Methods: Pregnant rats were subjected to normoxia or chronic hypoxia (13% O₂ starting on day 6 of pregnancy) with or without vitamin C (VC) supplementation (5 mg·ml⁻¹ in drinking water; n= 6-8 per group). Pregnant rats were euthanized on embryonic day 20. *Abcb1a*, *Abcb1b*, *Abcg2* and *Vegfa* mRNA expression were assessed in placenta and fetal liver using qRT-PCR.

Results: Hypoxia increased *Vegfa* mRNA expression in the placenta and fetal liver, confirming activation of hypoxic pathways. Hypoxia alone had no significant effect on placental *Abcb1a*, *Abcb1b* (the predominant placental isoform encoding P-gp) or *Abcg2* expression. However, in fetal liver, hypoxia alone decreased *Abcb1a* (predominant liver isoform), an effect prevented by VC (PAbcb1a mRNA. In hypoxic pregnancy, VC decreased (PAbcg2 mRNA in the placenta and *Abcb1* and *Abcg2* mRNA in the fetal liver.

Conclusions: Hypoxic pregnancy has little effect on drug transporter expression in the placenta, but causes a profound effect on *Abcb1a* (the predominant liver isoform encoding P-gp) in the fetal liver, *in vivo*. The latter effect is ameliorated by VC. Hypoxia-induced reduction in fetal hepatic *Abcb1a* expression will likely lead to an impaired ability of the fetal liver to excrete xenobiotics, drugs and certain hormones.

Funded by: Canadian Institutes of Health Research and The British Heart Foundation.

Primary Category Maternal-Fetal Medicine
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 92 C2

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University of Clinical Fellow

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Status for First (ie
Presenting) Author:

Presentation No Preference

Preference:

Abstract Title: Melatonin mitigates placental vascular resistance and cardiac dysfunction in a rabbit model of intrauterine growth restriction.

Abstract Keywords: IUGR, fetal growth restriction, melatonin, echocardiography

Précis:

The administration of melatonin to pregnant rabbits with fetal growth restriction reduces placental oxidative stress, reduces placental vascular resistance and improves fetal cardiac function.

Abstract:

Objective: In a rabbit model of IUGR, we administered melatonin to the mother, a potent anti-oxidant, which we hypothesised may reduce placental vascular resistance by mitigating oxidative stress and thereby improve fetal cardiac function.

Method: Using isoflurane induced anaesthesia, IUGR is surgically created at gestational age (GA) 25 (full-term 31d) by ligating 50% uteroplacental vessels. At GA d30 anaesthesia is induced with ketamine and xylazine intramuscularly, then maintained by a continuous infusion of ketamine and xylazine. A laparotomy is performed to expose the uterus, then microultrasound (VisualSonics VEVO 2100) examination performed (pulsed Doppler, M-mode and strain analysis). In one group, melatonin was administered daily to the mother (1mg/kg/sc) from GAd25-30. Placental superoxide dismutase (SOD), an antioxidant enzyme, was examined by enzyme-linked immunosorbent assay (ELISA).

Results: IUGR fetuses (n=8) displayed increased umbilical artery (UA) PI compared to controls (n=8) (p

Conclusion: Placental insufficiency was evidenced by absent/reversed end-diastolic velocity of UA Doppler with subsequent RV dysfunction in IUGR fetuses. Mitigation of placental vascular resistance and cardiac dysfunction via maternal administration of melatonin may represent a novel therapeutic for pregnancies complicated by IUGR.

Primary Category Maternal-Fetal Medicine
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 73

C4

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**University of
Toronto Trainee
Status for First (ie
Presenting) Author:
Presentation
Preference:**

Graduate student

Oral

Abstract Title:

Heparin Causes Placental Growth And Increased Expression Of
Trophoblast Progenitors In Mice; Implications For Preventing
Severe Preeclampsia

Abstract Keywords:

Preeclampsia, Heparin, Placenta, Mice, Trophoblast Progenitor
Cells, Hypoxia

Précis:

Heparin Treatment causes placental growth and increased expression of trophoblast progenitor cell markers in mice suggesting new approaches towards preventing severe preeclampsia.

Abstract:

Objective: Placental pathology in preeclampsia (PE) is associated with abnormal syncytiotrophoblast (SCT) cell layer abnormalities and higher expression of Hypoxia-inducible factor-1 alpha (Hif1a). Terminal fusion of the progenitor-like villous cytotrophoblast (VCT) cells is responsible for rejuvenation of the SCT layer. Heparin cuts the chance of recurrence for severe PE by half. Since heparin is needed to maintain mouse trophoblast stem cells *in vitro*, we hypothesized that heparin will promote retention of mouse trophoblast progenitor cells *in vivo*. To test this, mice were treated with heparin during pregnancy to examine the effects on the progenitor and syncytial markers in the exchange region of the placenta known as the labyrinth in mice.

Methods: Pregnant ICR mice were infused with low molecular weight heparin using clinical dose (10 IU/day), supra-therapeutic dose (70 IU/day), or saline from a day after implantation at E5.5 (term=E18.5) until the day of being euthanized at E12.5. Whole placentas were collected

for histology and labyrinth-enriched samples were flash frozen for qRT-PCR analysis of trophoblast marker gene expression.

Results: mRNA expression of syncytial markers (*Gcm1*, *Syna*, *Synb*) did not change after treatment. Fetal weights did not change after treatment, and there was a dose-dependent increase in placental weight ($p<0.05$, $n=12$). mRNA expression of suspected trophoblast progenitor markers, *Eomes* and *Sca1*, increased dose-dependently and by 2-fold in the high dose group ($p<0.05$, $n=12$). mRNA expression of Placental Lactogen-II (*Prl3b1*), a marker of sinusoidal trophoblast giant cells which are directly exposed to maternal blood, was elevated by treatment dose-dependently ($p<0.01$, $n=10$). *Hif1a* mRNA expression was reduced in the labyrinth region of the low dose group ($p<0.01$, $n=10$), along with a corresponding lowered staining for Hif1a protein in the labyrinth region of those mice. Fetal endothelium was visualized by CD34 staining and maternal blood space was reduced by 10% in both treatment groups ($p<0.0001$, $n=10$), along with an increase in the fetal blood space in the high dose group ($p<0.05$, $n=10$).

Conclusion: We suspect that in human pregnancy heparin might reduce the rate of recurrence of severe PE via promoting longer retention of trophoblast cells, coupled with reducing HIF1 α expression collectively improving the pregnancy outcome given our results in mice.

Primary Category

for Abstract: Maternal-Fetal Medicine, Preeclampsia

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 28

D1

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Status for First (ie Presenting) Author:
Presentation Preference: Poster
Abstract Title: Barriers to achieving a successful vaginal birth – a retrospective chart review
Abstract Keywords: Caesarean Section, VBAC, Robson Criteria, Obstetrics
Précis:

A retrospective chart review to ascertain barriers to achieving vaginal birth including factors associated with Caesarean Section and Vaginal Birth after Caesarean Section (VBAC).

Abstract:

Objective: To ascertain barriers to achieving vaginal birth at a downtown urban hospital. To determine factors associated with successful vaginal birth after Caesarean section (VBAC).

Method: Retrospective chart review of all Caesarean sections (CS), n= 871, performed in 2011 at St. Michael's Hospital. The database included successful VBAC births and social factors for all births (3000). Statistical analysis included Chi Square and Student' T-test.

Results: In 2011 the CS rate was 29%, n= 871 (371 elective, 500 intrapartum). Repeat CS (Robson 5A) represented 31% of all CS cases, followed by nulliparous women in labour (Robson 1) with 22%. English fluency was not significantly different between intrapartum CS, elective CS, VBAC and vaginal delivery (VD) patients. Of the CS patients, 56% were born outside of Canada. In contrast, only 38% of successful vaginal birth patients were born outside Canada. Only 12% of possible VBAC candidates attempted VBAC, with a success rate of 6.6%. Sixteen patients had a successful VBAC, and 15 had a repeat CS intrapartum. Dilatation at admission, maximum oxytocin and years since previous CS were not significantly different between the two groups.

Conclusion: We suggest further stratification of categories in the modified Robson criteria to capture medical indications for CS. We propose that increasing VBAC attempts will reduce the CS rate. Patient information materials and consultation regarding VBAC should be available in first language.

Primary Category for Abstract: Obstetrics

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 31

D6

Author(s): Jennifer Hunter (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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Status for First (ie Presenting) Author:

Presentation Preference: No Preference

Abstract Title: Barriers, expectations, and needs of young women during the transition from pediatric to adult gynecological care

Abstract Keywords: adolescents, emerging adults, young women, transition, patient-centred care, gynecology, needs assessment

Précis:

A needs assessment of the patients at the Young Women's Gynecology Clinic identified feelings and expectations of young women aged 17-25 and areas for improvement.

Abstract:

Objective: The Young Women's Gynecology Clinic (YWGC) at Women's College Hospital was conceived in 2012 to address the needs of women 17 to 25 years old, some of whom may be transitioning from pediatric /adolescent to adult health care. In order to provide patient-centred care to emerging adult women, physicians need to be aware of their needs, desires, and barriers to receiving appropriate healthcare. The current study was designed to assess the needs and barriers of this age group of women.

Methods: A needs assessment of YWGC patients was conducted by distributing an exit survey to patients who attended the clinic for their scheduled appointments. The survey assessed pre- and post-visit expectations, barriers to attending the clinic, desires regarding their health care, and demographic information.

Results: To date, thirty young women completed the survey after their appointments, a response rate of 65.2%. Nineteen patients (63.3%) attended their appointment unaccompanied. Of those who were accompanied, 36.4% brought a significant other, 54.5% their mother. The majority (63.3%) used transit to access the clinic and preferred a later afternoon weekday appointment time. While telephone communication was preferred by 86.7%, email (50%) and texting (13.3%) were other preferred methods of communication. Patient survey responses highlighted flexible appointment scheduling, relationships with the healthcare team and immediate treatment of problems as three key features they look for in a gynecology clinic. Pre-visit the majority of patients (63.3%) indicated that they felt anxious and/or nervous about their visit, this was reported by only 13% of patients post visit. Post-visit the majority of patients felt good (76.7%) and/or reassured (26.7%).

Additionally, 86.7% indicated that they felt their expectations were completely or mostly met. Most patients indicated that they wanted shared management of care but to make the final decision regarding their health care while 16.7% wanted complete control of options and decisions.

Conclusions: As these young women transition to adult gynecological care, we observe patient independence in unaccompanied appointments and desires for greater control of options and decisions. Gynecology appointments are a source of anxiety, which suggests that changes to pre-appointment preparations and communications could improve the experience. Clinics designed for emerging adult women should take into account location (public transit accessibility), preferences for later afternoon appointments, with flexible scheduling and electronic methods of communication. YWGC patient responses will aid improvements of healthcare services to the young adult population in this clinic and other clinics.

Primary Category Paediatric and Adolescent Gynaecology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 33 D2

Author(s): Leanne De Souza (**Presenter**), St Michael's Hospital
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Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Abdominal visceral adiposity and insulin resistance in early pregnancy

Abstract Keywords: Visceral adiposity, obesity, body mass index, insulin resistance, insulin sensitivity index, gestational diabetes, glucose handling

Précis:

We investigated the relation between first-trimester measurement of visceral adipose tissue (VAT) depth and insulin resistance (IR), as the association between these remains unknown.

Abstract:

Objective: High pre-pregnancy body mass index (BMI) is a known risk factor for gestational diabetes mellitus (GDM), but the contribution of abdominal adiposity to insulin resistance (IR) in pregnancy is not well understood. We assessed the association between abdominal adiposity in early pregnancy and IR.

Methods: We completed a prospective cohort study of 79 pregnant women. Visceral adipose tissue (VAT) depth was measured by ultrasonography at 11-14 weeks' gestation, at the time of routine fetal nuchal translucency assessment. A 2-hour 75-g oral glucose tolerance test was subsequently done at 16-22 weeks' gestation and IR was estimated by the homeostatic model assessment of insulin resistance (HOMA-IR) as well as by the Insulin Sensitivity Index (ISI).

Results: Each 1-cm increase in VAT depth was associated with a higher HOMA-IR (0.1, 95% CI 0.0-0.2). Upon adjusting for maternal age, parity, ethnicity and pre-pregnancy BMI, VAT depth explained 43% of the variance in HOMA-IR, which was slightly better than the variance in the multivariable model examining HOMA-IR and pre-pregnancy BMI (40%). For ISI, the model variance values were 36% and 32%, respectively.

Conclusions: Measurement of maternal VAT at the time of routine first trimester ultrasonography can provide additional information about maternal IR, beyond pre-pregnancy BMI.

Source of funding: Canadian Institutes of Health Research (CIHR)

Primary Category Obstetrics
for Abstract:

Secondary Gestational Diabetes Mellitus
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 71 D5

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University of Clinical Fellow

Toronto Trainee

Status for First (ie
Presenting) Author:

Presentation Oral
Preference:

Abstract Title: Has the Management of Pediatric and Adolescent Ovarian Torsion changed
over the past 25 years?

Abstract Keywords: pediatric, adolescent, ovary, torsion, de-torsion, oophorectomy

Précis:

The ovarian conservation rate in the management of pediatric and adolescent ovarian torsion has increased at The Hospital for Sick Children over 25 years.

Abstract:

OBJECTIVE

Prompt diagnosis and management of pediatric and adolescent ovarian torsion may prevent irreversible adnexal damage. While recent reports reflect increasing rates of ovarian conservation, others have high oophorectomy rates. A retrospective review of 35 cases from 1988-2002 in our institution, documented an ovarian conservation rate of 46%. Subsequent to that publication quality improvement measures were initiated. The objective of this study is to determine the rate of ovarian conservation in the past ten years compared to the initial published cohort. In addition, rates of negative laparoscopy for torsion and recurrence rates of torsion will be assessed.

METHODS

With institutional REB approval, a retrospective chart review of females, 1 day old to 17 years + 364 days of age, with a suspected or final diagnosis of ovarian, adnexal, or ovarian and tubal torsion, from January 1, 1988 to October 15, 2013 is ongoing. Cases of antenatally diagnosed ovarian torsion with auto-amputation and isolated tubal torsion are excluded. Cases from January 1, 2003 - December 31, 2003 are excluded as these occurred prior to educational implementation.

Data collection includes patient demographics, presentation, imaging, surgical findings, management, timeline for each step of care and postoperative course. Patients are separated into two cohorts: early (1988-2002) and late (2004-2013) (pre and post implementation of our educational initiatives).

Statistical analysis with SAS software will be performed.

RESULTS

We identified 208 unique patient cases to screen for inclusion, 75 have been screened. Twenty-five cases did not meet inclusion criteria. Fifty cases from both cohorts with a diagnosis of suspected torsion were taken to the operating room. The mean age of all suspected torsion cases is 12.3. 18/50 (36%) had a negative laparoscopy despite suspected ovarian torsion and the mean age was 14.1. The most common postoperative diagnoses in the non-torsion cases were hemorrhagic cyst and corpus luteal cyst. 32/50 patients had ovarian +/- tubal torsion. The mean age was 11.25 and 53% were premenarchal. 69% of ovarian torsions had an associated adnexal mass based on surgeon impression intraoperatively and/or pathology. In the 28 cases reviewed to date from the new 2004-2013 cohort, the de-torsion rate was 93% (26/28). There were three cases of recurrent ovarian torsion.

CONCLUSIONS

Subsequent to publishing a cohort on ovarian torsion with an ovarian conservation rate of 46%, protocols, education and quality assurance measures have been implemented. Preliminary data demonstrates a higher rate of ovarian conservation, in a recent cohort from 2004-2013.

Primary Category Paediatric and Adolescent Gynaecology
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 77 D4

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University of Toronto Trainee Medical Student

Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Office D&C Utilizing Ultrasound Guidance for Missed Abortion: An Analysis of Complications Compared with Non-U/S Guided Hospital and/or Office D&C

Abstract Keywords: ultrasound, abortions, office D&C, dilatation and curettage, complication rates

Précis:

Office D&C under ultrasound guidance for missed abortion could potentially reduce procedure related complication rates compared with standard techniques.

Abstract:

Objective: Suction D&C in the office setting has been shown to be a safe and effective technique for the surgical management of missed abortion. There is some data to suggest that intraoperative ultrasound guidance has a role in reducing complications in first-trimester therapeutic abortion. We sought to determine whether office-based D&C utilizing intraoperative ultrasound guidance for D&C is safe and reduces complications rates compared with standard hospital-based D&C under general anesthesia.

Methods: This study received institutional REB approval. This is a retrospective chart review of office-based ultrasound-guided D&Cs performed for missed abortion at the CReATe Fertility Centre between January 1, 2011 and December 31 2013. All patients received intravenous conscious sedation and most underwent a paracervical block for their procedure. Transabdominal ultrasound guidance was utilized during the procedure to ensure adequate tissue evacuation, followed with the use of a transvaginal ultrasound probe to confirm full evacuation before completing the procedure. The following information was collected: age, BMI, ethnicity, and gestational age at missed abortion. All intra- and post-operative complications were documented, and rates of complications were compared to previously published data.

Results: 163 cases of U/S-guided D&C were reviewed at the time this abstract was prepared. Of the 163 patients reviewed, two (1.2%) had retained products of conception, both requiring uterine re-evacuation. Both of these women had uterine anomalies (large fibroids (n=1) and a Mullerian anomaly (n=1)). This rate of retained products appeared to be superior or comparable to the rates reported for standard D&Cs performed in an operating room under general anesthesia and/or non-U/S guided office D&C (1.2). There were no cases of post D&C uterine synechiae, perforation, infection or excessive bleeding.

Conclusions: Office-based D&C under ultrasound guidance appears to have the potential to reduce rates of retained products of conception after suction D&C for missed abortion. It also appears that rates of other complications may be lower with this technique compared with standard blind D&C under general anesthesia in hospital and/or in the office setting. This data strongly suggests that further evaluation of this technique in the form of a prospective randomized controlled trial would be a worthy endeavor to both evaluate complication rates and cost effectiveness compared with standard techniques.

1) Allison et. al. "Management of First Trimester Pregnancy Loss Can Be Safely Moved into the Office." Reviews in Obs and Gyn 4.1 (2011)

2) Dalton et al. "Patient Preferences, Satisfaction, and Resource Use in Office Evacuation of Early Pregnancy Failure." Obs & Gyn 108.1 (2006)

Primary Category Obstetrics
for Abstract:

Secondary Ultrasound
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 74

D3

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Status for First (ie
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Presentation
Preference:**

Medical student

Poster

Abstract Title:

Obstetrical Risk Awareness in Primiparous Women Over the Age of 35

Abstract Keywords:

primiparous, pregnancy, obstetrics, complications, age-related, awareness, education

Précis:

Questionnaire of 33 primiparous women 35 years of age or older demonstrates poor awareness of age-related pregnancy complications and adverse birth outcomes.

Abstract:

Objective: Advanced maternal age has been associated with declining fertility, greater risk for complications during pregnancy, and adverse birth outcomes. However, the degree to which women are aware of the consequences delaying pregnancy has on obstetrical risks during pregnancy is unknown. The goal of this study was to assess the knowledge of primiparous women over 35 years of age regarding obstetrical risks associated with advanced maternal age.

Methods: This is a prospective observational study with Mount Sinai Hospital (MSH) ethics approval. Following informed consent, a questionnaire was administered to 33 primiparous women 35 years of age or older attending a prenatal appointment at MSH. The questionnaire contained three sections - demographics, questions regarding awareness of age-related obstetrical risks, and participant's perceptions about their pregnancy knowledge and sources of information.

Results: In our assessment of primiparous mother's awareness of risks in pregnancy the sample to date is on average 37.5 years of age, married, highly educated with a university bachelor degree or higher, has a household income of \$100,000 or greater, are of European ethnicity, and speak English most often at home. Most of the women were aware of the risk of infertility and genetic abnormalities in the baby associated with older maternal age, but were less familiar with other risks. The proportion of correct responses were as follows: gestational hypertension (63.6%),

gestational diabetes (60.6%), Caesarean delivery (51.5%), pre-eclampsia (48.5%), low birthweight babies (30.3%), use of assisted devices during delivery (27.3%), placental abruption (21.2%), placenta previa (18.2%), and preterm birth (15.2%). Only 39.4% of participants claimed to have had counseling by a healthcare provider regarding complications associated with age. However, most felt they were well informed on age-related risks (69.7%) and rated their knowledge as average (75.8%). The majority of women (60.6%) were open to receiving more information, and want to receive this information through their physician (35%) or online resources (30%), preferably preconception (57%) or early in their pregnancy (43%).

Conclusion: This study demonstrates that there is good knowledge of the relationship between advanced maternal age and infertility, however the awareness of other obstetrical complications and adverse birth outcomes remains low. With only a minority of participants receiving counseling on age-related risks during pregnancy, there may be missed opportunities for education. The gaps in obstetrical risk awareness identified through this study may inform preconception and prenatal counseling, specifically targeting women of older maternal age.

Primary Category

for Abstract: Obstetrics, Advanced maternal age

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 1 E3

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Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Transforming Growth Factor Betas (TGFβs)—Novel Regulators of Sphingolipid Metabolism in the Human Placenta

Abstract Keywords: Trophoblast, IUGR, Transforming Growth Factor Betas, Sphingolipids, Placenta

Précis:

Our data imply a role for TGFβ1/3 in regulating acid ceramidase and sphingosine kinase expression in trophoblast cells thereby impacting the human placental sphingolipid rheostat.

Abstract:

Objective: Disruptions to sphingolipid metabolism contribute to the onset of a variety of human pathologies. This is primarily due to the fact that sphingolipids function as key bioactive mediators in cell signalling events. Importantly the balance between pro-death ceramide (CER) and sphingosine (SPH), and pro-survival sphingosine 1 phosphate (S1P) is tightly controlled by sphingolipid metabolizing enzymes such as acid ceramidase (AC) and sphingosine kinase 1 (Sphk1). We have previously established the importance of altered TGFβ signalling in preeclampsia and intrauterine growth restriction (IUGR); as well, we have recently found altered sphingolipid profiles in preeclamptic placentae. Herein, we investigate the role of TGFβs in regulating sphingolipid metabolism in the human placenta in physiological and pathological conditions

Methods: Sphingolipid levels were measured in human placental tissue from IUGR and pre-term control (PTC) cases by high performance liquid chromatography (HPLC) linked to tandem mass spectrometry (MS/MS). Human choriocarcinoma JEG3 cells cultured at standard conditions were treated with TGFβ1, TGFβ3 (5 ng/ml), or control vehicle (DMSO). To examine the contribution of TGFβ signalling, human villous explants/JEG3 cells were treated with the activin receptor-like kinase (ALK5) inhibitor SB431542 (10 μM) one hour prior to TGFβ treatment. For silencing experiments, JEG3 cells were transfected with empty pSuper vector or siSmad2-encoding plasmid using Lipofectamine® transfection reagent. In placental tissue and JEG3 cells, AC and Sphk1 mRNA levels were evaluated by quantitative-PCR and protein expression was examined by Western blotting.

Results: Lipidomics analysis by HPLC-MS/MS revealed reduced CER levels and increased SPH

levels in IUGR placentae vs controls. This was accompanied by a significant increase in AC expression and a marked reduction in Sphk1 expression in IUGR. Similarly to IUGR, exposure of human choriocarcinoma JEG3 cells to TGF β 1/3 resulted in altered AC and Sphk1 expression levels. Pharmacological inhibition of the type I TGF β receptor ALK5 by SB431542 or Smad2 silencing cells reversed the TGF β stimulatory effect on AC expression indicating an ALK5-, Smad2-dependent regulation; whereas, intriguingly, Sphk1 expression was unaltered by these hindrances.

Conclusions: Altered TGF β signalling in IUGR placentae may contribute to the dysregulation of sphingolipid metabolism, thereby promoting trophoblast cell death typical of this pathology.

Funded by: CIHR and OGS

Primary Category for Abstract: Reproductive Endocrinology

Secondary Category for Abstract: IUGR

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 34 E4

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University of Toronto Trainee Status for First (ie Presenting) Author: Post-Doctoral Fellow

Presentation Preference: Poster

Abstract Title: Progesterone Receptor A mediates de-repression of Connexin43 expression

Abstract Keywords: Progesterone receptors, Connexin 43, myometrium, labour initiation, AP-1 transcription factors

Précis:

Progesterone Receptors (A/B), differentially interact with the AP-1 factors and upregulation and interaction of PRA-JUN/FOS at term, activates Cx43 transcription to initiate myometrial contraction/labour.

Abstract:

Connexin43 expression is critical for myometrial contraction and labor induction. Progesterone represses its transcription during gestation through the recruitment of PR/p54/AP-1 complex to the Cx43 promoter. Before the onset of labor this suppression is removed, for which the mechanism is still unknown. The change in the expression ratio of PR isoforms has been implicated. We have previously reported that the JUN/FOS heterodimers are stronger inducers of Cx43 transcription compared to the JUN/JUN homodimers. We have also reported that mechanical stretch induces cFOS mRNA expression in myometrial cells, implicating the prevalence of heterodimer near term. Therefore, we hypothesized that the PR isoforms may have differential affinity for FOS members affecting their ability to repress Cx43 transcription.

METHODS: Proteins were extracted from the myometrial samples collected from mice at gestational days 11,13,15,17,18,19 not in labor (NL), and 19 in labor (L) (n=6), for western blot analyses. *In-situ* Proximity ligation Assay (PLA) was performed to determine the interactions of PR isoforms with AP-1 transcription factors and co-repressor proteins. Co-Immunoprecipitation was performed to confirm those interactions. In-vitro protein-DNA binding assay was performed to examine the recruitment of PRs to Cx43 promoter.

RESULTS: In mouse myometrium the protein levels of PRA, JunB, cFos and Fra-2 were found significantly higher on the laboring day compared to other days. PLA analysis revealed that PR isoforms differentially interact with the AP-1 members, with PRA presenting stronger affinity for the FOS, and PRB with the JUN members. Co-IP depicted similar results. Using the in-vitro protein-DNA binding assay, we examined the recruitment of PR isoforms to Cx43 promoter with the overexpression of different JUN/FOS members in myometrial cells. We found that PRB failed to bind to the Cx43 promoter in the presence of cFOS and FRA-1, whereas PRA showed similar affinity to the promoter with all AP-1 members. Interestingly, we also found that PRB strongly interacts with the transcriptional co-repressor protein p54^{nrb} in human myometrial cells while PRA does not, suggesting that de-repression of Cx43 during labor may be mediated by PRA.

CONCLUSIONS: During gestation, p54-PRB and JUN/JUN homodimer complex represses Cx43 transcription. Before the onset of labor, upregulation of PRA and FOS members increase the probability of PRA-JUN/FOS heterodimer complex formation, which does not bind to the repressor protein p54 but efficiently binds to the Cx43 promoter resulting in induction of Cx43 transcription and labor.

FUNDING: MOP-111148/CIHR

Primary Category Reproductive Endocrinology
for Abstract:

Secondary Preterm Labour
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 44 E6

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Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: The Role of Ovarian Factors on Fetoplacental Microvascular Growth in Late Gestation in Mice

Abstract Keywords: Placenta, Fetoplacental Microvasculature, Ovariectomy, Estradiol, Late Gestation, Mouse

Précis:

Removing ovarian factors, by performing a bilateral ovariectomy and sustaining progesterone levels, stunted fetoplacental microvascular growth while stimulating fetal growth in late gestation

Abstract:

Objectives: In late gestation, rapid fetal growth is matched by large increases in nutrient and oxygen delivery. Surprisingly, placental weight does not significantly change. Instead there is a large increase in placental capillaries resulting in an increased surface area for maternal-fetal exchange. The angiogenic mechanism that regulates this change in vascularization is poorly understood. Prior work in late gestational rodent pregnancy suggests that in the absence of fetal signals, the ovaries inhibit growth of the placental exchange region. Studies suggest estradiol might be the inhibitory ovarian signal involved. The objective of this study was to determine the effect of ovarian signals on placental vascularity. In mice, the ovary is the principal supply of hormones such as estrogen and progesterone throughout the entire pregnancy. By removing the supply of ovarian hormones and factors to the pregnancy via bilateral ovariectomy we can observe the changes in fetoplacental microvascular growth.

Methods: CD1 mice underwent surgery on day 15.5 of pregnancy (E15.5), which involved either a bilateral ovariectomy or sham operation. In the bilateral ovariectomy group, mice received daily injections of a progesterone analogue to sustain pregnancy till term (E18.5). Shams received vehicle injections. 48 hours after the surgery, blood samples were collected to measure maternal hormone levels. Fetuses and placentas were weighed, and then placentas were fixed for histology.

Results: Bilateral ovariectomy reduced plasma estradiol levels by half (p

Conclusion: Results suggest that ovarian factors in late gestation promote fetoplacental microvascular growth while diminishing non-blood space components in the exchange region of the placenta. Ovarian factors also appear to restrain late gestational fetal growth by an unknown

mechanism.

Funding: Supported by CIHR, Samuel Lunenfeld Research Institute Fellowship, Department of Physiology at University of Toronto Fellowship and the Norman Stuart Robertson Fellowship.

Primary Category Reproductive Endocrinology
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 55 E5

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University of Graduate Student

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Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: High saturated fatty-acid attenuates insulin signaling in mouse GnRH neuronal cell model, mHypoA-GnRH/GFP

Abstract Keywords: high fat, GnRH neurons, obesity, insulin resistance, hypothalamus

Précis:

High levels of saturated fatty-acids induce insulin resistance and GnRH peptide gene expression changes in GnRH neurons.

Abstract:

Objective: Obesity negatively affects reproductive function. The physiology linking obesity and reproduction, however, is not well-understood. Elevated levels of circulating fatty acids in the obese state may play a role in the dysregulation of reproduction. Diets rich in fats, for example, induce insulin resistance in muscle, liver, and hypothalamic tissues. In the hypothalamus, GnRH neurons integrate neuropeptide, endocrine, and nutrient signals to regulate the hypothalamic-pituitary-gonadal axis and coordinate reproduction. The regulation of GnRH neurons by fatty acids, particularly saturated fatty acids, is not well studied. Due to the challenges of studying the regulation of GnRH neurons *in vivo*, we have generated and used the mHypoA-GnRH/GFP cell line, which represents a heterogeneous population of adult female mouse hypothalamic GnRH neurons. With this model, we aim to describe the regulation of GnRH neurons by saturated fatty acids.

Methods: The mHypoA-GnRH/GFP cells were pre-exposed to 75 μ M palmitate, a saturated fatty acid, for 24 hours. Following palmitate pre-exposure, cells were serum starved and subsequently

treated with 10 nM insulin for 15 minutes. Relative levels of phosphorylated Akt, a marker for insulin signaling, were assessed using Western blot. Relative levels of GnRH mRNA were also measured after 24 hours palmitate treatment using qRT-PCR. In addition, a high-fat diet (45% kcal) was administered to C57/B6 mice for 20 weeks. GnRH mRNA levels in isolated hypothalami were measured using qRT-PCR.

Results: 24 hour palmitate pre-exposure attenuated insulin-induced phosphorylation of Akt in mHypoA-GnRH/GFP cells. After 24 hours, palmitate increased GnRH mRNA levels in a dose-dependent manner in mHypoA-GnRH/GFP cells. After 20 weeks, hypothalami from high-fat-fed mice exhibited elevated GnRH mRNA levels.

Conclusions: After 24 hours, high levels of palmitate attenuated insulin signaling and induced GnRH gene expression in mHypoA-GnRH/GFP neurons. Twenty weeks of high-fat diet increased levels of GnRH mRNA in mice hypothalami. These results suggest that high saturated fatty acid levels—such as in the obese state—induce insulin resistance in GnRH neurons. Insulin resistance may be linked to the upregulation of GnRH gene transcription. The forkhead box protein O1 (FOXO1), a transcription factor involved in the insulin signaling pathway, may be implicated in the observed changes in GnRH gene expression; using promoter databases, we have identified potential binding sites for FOXO1 on the mouse GnRH promoter. Together, these results further develop our understanding of the association between obesity and reproductive function, possibly implicating the dysregulation of GnRH neurons by high circulating saturated fatty-acids.

Funded by: CIHR

Primary Category Reproductive Endocrinology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 93 E1

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University of Clinical Fellow

Toronto Trainee

Status for First (ie
Presenting) Author:

Presentation Oral
Preference:

Abstract Title: Estradiol levels in breast tissue are not different between post-menopausal healthy women regardless of hormone replacement status.

Abstract Keywords: menopause, postmenopausal, estradiol, breast, steroid hormones, hormone replacement therapy

Précis:

A pilot study of breast tissue steroid hormone levels in post menopausal women with and without hormone replacment therapy

Abstract:

Background:

According to the Women's Health Initiative (WHI) study, use of combined estrogen/progesterone hormone therapy is linked with increased risk of breast cancer (BC) in postmenopausal women. Breast cancer risk is increased with prolonged exposure to estrogen; however rather than a decrease in the incidence of BC after menopause, when circulating estrogen levels fall, rates of BC continue to rise with age. It is now accepted that the peripheral in-situ biosynthesis of estrogen through the aromatase pathway contributes to almost 100% of the total estrogen produced in postmenopausal women.

Objectives:

We hypothesised that due to the presence of aromatase in breast tissue, there is no difference in measured levels of estrogen in healthy female breast tissue in postmenopausal women on hormone therapy (HT) and postmenopausal women without HT, despite the peripheral decrease in estrogen.

Methods:

In a pilot study of 9 postmenopausal women on HT (Group 1) and 12 postmenopausal women without HT (Group 2) breast tissue Estradiol, Progesterone, Androstenedione, and Testosterone were extracted from fine needle breast biopsy samples. Results were analysed using a digital microfluidic based sample extraction technique, coupled with a highly sensitive high performance liquid chromatography (HPLC) - Mass Spectrometer (LTQ–Linear IT-Thermo Scientific, Waltman, MA).

Results:

There was no difference in mean age between Group 1, age 55 ± 7 years and Group 2 , age 56 ± 7 years $p=0.8$, nor was there a difference in duration of menopause at time of sampling, 7 ± 6 and 8 ± 7 years, respectively ($p=0.6$). Median breast estradiol levels were not different between the two groups: Group 1 estradiol 9.4fmol/mg (interquartile range, 5.7 – 11.9) and Group 2 at 9.7fmol/mg (IQR 6.4 to 22.5), $p=0.6$. Mean breast androstendione levels were not different between groups ($p=0.4$), however mean breast testosterone levels were significantly lower in group 1 compared to group 2 at $4.1\text{fmol/mg} \pm 2.7$ and $17.3\text{fmol/mg} \pm 11.0$ respectively (p

Conclusions:

This data suggests that there is no difference in breast estrogen levels in women on hormone therapy compared to those without and therefore estrogen replacement therapy may not be the cause of increased breast cancer risk on HT. It is possible that the progestin component of HT may

have an adverse impact; further analysis of breast tissue steroid hormone levels are being undertaken.

Primary Category for Abstract: Reproductive Endocrinology

Secondary Category for Abstract: Menopause

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Author(s): Alice Treen (**Presenter**), Department of Physiology, University of Toronto
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University of Toronto Trainee Status for First (ie Presenting) Author: Graduate student
Presentation Preference: Poster

Abstract Title: The Role of the Novel Reproductive Peptide Phoenixin-20 Amide in the Regulation of GnRH Transcription and Secretion in a GnRH Hypothalamic Cell Model

Abstract Keywords: GnRH, Hypothalamus, Phoenixin-20 Amide, Neuroendocrine

Précis:

Treatment of a GnRH hypothalamic cell line with the novel reproductive peptide phoenixin-20 amide, increased GnRH transcription and secretion and ERK ½ phosphorylation.

Abstract:

Objective: Reproductive function is coordinated by the actions of specific neuropeptides and peripheral hormones, all of which converge on the gonadotropin-releasing hormone (GnRH) neurons, which reside at the pinnacle of the hypothalamic-pituitary-gonadal (HPG) axis. Phoenixin-20 amide (PNX-20) is a recently described peptide found to increase GnRH-stimulated LH secretion and up-regulate GnRH receptor mRNA at the level of the anterior pituitary. However to date, no studies have looked at the role of PNX-20 at the level of the hypothalamus, where it is most highly expressed. PNX-20 expression has been detected by qRT-PCR in many of the rodent, immortalized hypothalamic cell lines generated by our laboratory. The mHypoA-GnRH/GFP cell line was initially selected as a model of central neurons in reproductive system. We have used mHypoA-GnRH/GFP cell lines to help elucidate the role of phoenixin at the level of the hypothalamus in the transcriptional and secretory regulation of GnRH. We also sought to delineate the signalling events initiated by PNX-20.

Methods: The mHypoA-GnRH/GFP cell line was treated with 10 and 100nM PNX-20 and the relative c-fos and GnRH mRNA expression was determined by qRT-PCR over a 1 hour and 24 hour time course respectively. Relative phosphorylation of ERK1/2, CREB and AKT was also measured using Western blot method over a 1 hour time course. Secretion of GnRH was

measured after treatment with 10 or 100nM PNX-20 for 1 hour using an ELISA.

Results: 10 and 100nM PNX-20 amide treatment on the mHypoA-GnRH/GFP cell line was found to increase c-fos mRNA within 30 minutes by approximately 20% ($P < 0.05$), indicating neuronal activation. 100nM PNX-20 treatment was also found to stimulate GnRH mRNA expression by 45% ($P < 0.05$) after 8 hours and increase the secretion of GnRH by approximately 20% ($P < 0.05$). 10 and 100nM of PNX-20 increased phosphorylation of ERK1/2 at 30 minutes.

Conclusions: These experiments are the first to implicate a role for phoenixin-20 amide at the level of the hypothalamus and in the regulation of GnRH transcription and secretion. They suggest that PNX-20 may use the MAPK signalling pathway to stimulate the GnRH neuron. These experiments will help us to understand the role that phoenixin-20 may play in reproduction and at the level of the hypothalamus and expand our current knowledge of the HPG axis.

Primary Category

for Abstract: Reproductive Endocrinology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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University of Toronto Trainee Graduate Student
Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: Differentiating Pluripotent Stem Cells and Trans-differentiating Fibroblasts to Six2+ Renal Progenitors for Kidney Cell Therapy

Abstract Keywords: Differentiation of pluripotent stem cells, trans-differentiation, renal progenitors, cell therapy, decellularized scaffolds, mouse models of ischemia/reperfusion injury

Précis:

Investigating two methods of generating clinically relevant Six2+ renal progenitors (differentiation of pluripotent stem cells and trans-differentiation of fibroblasts) for kidney cell therapy.

Abstract:

Objective: The main goal of this project is to develop an effective cell therapy for acute kidney injury that is safe and practical to use in clinic. We are investigating two methods of generating kidney progenitors for transplantation: differentiation of pluripotent stem cells and trans-differentiation of mature somatic cells. In the process, we will develop a better understanding of the influence of epigenetic memory on differentiation/trans-differentiation propensity and functionality of the generated renal progenitors. The regenerative potential of the renal progenitors will be assessed using *in vitro* and *in vivo* assays.

Methods: To differentiate pluripotent stem cells to renal progenitors, we developed a staged differentiation protocol consisting of three defined media to sequentially differentiate embryonic stem cells to Brachyury+ mesoderm, Pax2+ intermediate mesoderm (IM), and Six2+ metanephric mesenchyme (MM). The growth factors and small molecules combinations in the differentiation media mimic the conditions present in normal gastrulation and embryo development. To trans-differentiate fibroblasts to renal progenitors, we generated expression vectors for six kidney-specific transcription factors in a doxycycline-inducible *piggyBac* transposon system. The six expression factors were introduced into fibroblasts via electroporation and expression was

induced by the addition of doxycycline.

Results: *Differentiation* – After two days in culture with our mesoderm induction media, we found that 80% of the embryonic stem cells expressed Brachyury. Subsequent culture of the Brachyury+ cells in IM media resulted in 80% Pax+ cells. Next, Six2+ kidney progenitor cells were induced in about 5% of the Pax2+ cells in our MM media. When reseeded into decellularized kidney scaffolds, the differentiated Six2+ progenitors can self-organize into tubular structures similar to a normal kidney, a property that embryonic Six2 cells have. *Trans-differentiation* – Following transfection and culturing in our supportive media, Six2 expression can be induced in up to 9% of the fibroblasts as early as five days post doxycycline addition, and expression is sustained for up to two weeks.

Conclusions: Embryonic kidney development studies show that Six2+ MM cells are multi-potent renal progenitors capable of self-renewal and forming nephrons *in vivo* and *in vitro*. This makes Six2+ progenitor cells an ideal candidate for kidney cell therapy. However, it is unethical and not sustainable to isolate embryonic SIX2+ from developing human fetus for transplantation. Here, we showed that Six2+ kidney progenitors for cell therapy can be generated *in vitro* using two sustainable and clinically relevant methods: differentiation of pluripotent stem cells and trans-differentiation of fibroblasts.

Primary Category Stem Cell Biology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 48 F4

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University of Graduate Student
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Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Combined Cell and Gene Therapy towards the Treatment of Age-related Macular Degeneration and Diabetic Retinopathy

Abstract Keywords: Cell Therapy, Gene Therapy, Age-related Macular Degeneration, Diabetic Retinopathy, Eye diseases, Neovascularization, VEGF

Précis:

Combining cell and gene therapy can inhibit abnormal blood vessel growth in eye diseases such as AMD and DR in a controlled and long-term manner.

Abstract:

Objective: We are proposing to generate transgenic cells expressing inducible local acting anti-VEGF biologics, referred to as VEGF Sticky-trap. VEGF Sticky-trap has the ability to bind to extracellular matrix (ECM) components as well as inhibit VEGF-mediated angiogenesis. If transplanted, these cells allow minimally invasive, controlled, long-term and local acting inhibition of neovascularization in eye diseases associated with abnormal vessel formation, diabetic retinopathy (DR) and AMD.

Methods: Transgenic cells expressing VEGF Stick-trap in an inducible manner were generated using both *in-vivo* and *in-vitro* approaches. Stable embryonic stem cell (ESC) lines, expressing VEGF Sticky-trap in a controlled manner *in-vitro*, were derived using a combination of the doxycycline-inducible transgene expression system with the *piggyBac* transposon-based delivery technology. For cell type specific expression of VEGF Sticky-trap *in-vivo*, a transgenic mouse is being generated. Cells through direct differentiation of ESC and isolated primary cells from the transgenic mouse will then be injected into the diseased eye of AMD and DR mice using a hydrogel-based delivery system.

Results: We have shown that VEGF Sticky-trap, upon intravitreal and subretinal injection, binds to the ECM components of the eye. In contrast to the original VEGF trap, VEGF sticky-trap was local acting and undetectable in circulation 6 hrs post eye injection. Furthermore, we have shown that VEGF Sticky-trap is able to inhibit neovascularization in a murine model of DR. Functional retinal pigment epithelium (RPE) cells and neuronal progenitor cells expressing VEGF Sticky-traps in an inducible manner have been generated from human and mouse ESC. We have shown that VEGF Sticky-trap, expressed by these cells *in-vitro*, is able to bind to ECM and trap soluble VEGF only upon doxycycline induction demonstrating a controlled production of VEGF Sticky-trap. In addition, we have characterized the ability of the transgenic RPE cells to incorporate into the eye.

Conclusions: VEGF Sticky-trap is able to inhibit neovascularization effectively *in-vivo*, as we have shown in a murine model of DR. Once it enters the circulation it is degraded within a short amount of time (

Funding: McEwen Acceleration Award and OCRIF

Primary Category for Abstract: Stem Cell Biology

Secondary Category for Abstract: Eye diseases

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 49 F3

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University of Toronto Trainee
Status for First (ie Presenting) Author:

Undergraduate Student

Presentation Preference: Poster

Abstract Title: Human Umbilical Cord-derived Perivascular Cells can Differentiate into Endothelial-like Cells in vitro

Abstract Keywords: Human Umbilical Cord-derive Perivascular Cells Differentiate into Endothelial-like Cells

Précis:

Purpose: evaluate the endothelial cell differentiation of human umbilical cord-derived perivascular cells from the first-trimester and term cells using published methods and a novel protocol.

Abstract:

Ojective: The aim of this study was to evaluate and compare the endothelial cell differentiation capacity of human umbilical cord-derived perivascular cells from the first-trimester (FTM-PVC) and term (TERM-PVCs) using previously published methods and a novel protocol developed in our laboratory.

Methods: All experiments were conducted with REB approval. Previously established lines of FTM- and TERM-PVCs (one line of each) were expanded in α MEM + 10% FBS. Two previously published protocols^{1,2} for MSC-based endothelial differentiation were tested. Monolayers of PVCs were cultured in DMEM + 2% FBS supplemented with VEGF, FGF2 and EGF for 7 days. PVCs cultured in DMEM + 2% FBS alone were used as negative controls. Alternatively, PVCs were cultured in endothelial cell medium (EBM2™, Lonza) together with a supplement for optimal growth (Bullet kit™) for 10 days. Non-supplemented EBM2 media was our negative control. Endothelial differentiation was assessed by morphology and expression of the endothelial markers (CD31, CD34, vWF) using immunocytochemistry (ICC) and flow cytometry (FC). HUVECs were used as a positive control. Pre-differentiated PVCs were subjected to a tube formation assay as a measure of endothelial potential, and compared to HUVEC-based control assays. A novel differentiation protocol was developed using PVC aggregates. Briefly, PVC aggregates were formed in hanging drops for 3 days, plated on tissue dishes coated with collagen or matrigel, and cultured in α MEM + 10% FBS or EBM2 + 10% FBS. Endothelial differentiation was assessed based on morphological characteristics and expression of the endothelial markers (CD31, CD34, vWF).

Results: No endothelial cell-like differentiation was observed using the VEGF/FGF/EGF supplemented culture condition. Both FTM- and TERM-PVCs adopted an endothelial cell-like morphology when cultured in EGM2 for 10 days. While FTM-PVCs did form tubular structures in these experimental conditions and expressed vWF, this protocol did not result in convincing endothelial differentiation for either cell type. In a tube formation assay, pre-differentiated FTM-PVCs aggregated and formed tubular structures by 96hrs compared to 18hrs for HUVECs, while pre-differentiated TERM-PVCs only aggregated. Within a week of culture on either collagen or diluted RGF Matrigel™ in EBM + 2% FBS, cells extending from FTM-PVC aggregates formed

tubular structures, and in case of RGF matrigel, they expressed the endothelial markers vWF, CD31, and CD34.

Conclusions: Our preliminary data suggests that FTM-PVCs have an increased capacity for endothelial lineage differentiation when compared to TERM-PVCs. Aggregate-based preconditioning appeared to boost the capacity of FTM-PVCs to differentiate towards the endothelial lineage.

Primary Category Stem Cell Biology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 62 F5

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University of Undergraduate Student
Toronto Trainee
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Presentation Poster
Preference:

Abstract Title: Human umbilical cord-derived perivascular cells support angiogenesis in vitro

Abstract Keywords: Umbilical cord, perivascular cells, MSC, stem cell, vascular regeneration

Précis:

Human umbilical cord perivascular cells express angiogenic molecules and support endothelial cell tube formation in vitro.

Abstract:

Objective: The aim of this study was to determine whether first-trimester (human umbilical cord-derived perivascular cells (FTM-PVCs) can promote and support angiogenesis using an in vitro tube formation assay.

Methods: All experiments were conducted with REB approval. Previously established lines of FTM--PVCs were expanded in α MEM + 10% FBS. Gene expression for 3 independent lines of FTM-PVCs were analyzed using a growth factor and cytokine focused gene array (Sabiosciences). To determine whether factors secreted by FTM-PVCs can promote angiogenesis, basal medium (EBM) conditioned by FTM-PVCs cultured under hypoxic and normoxic conditions was added to an *in vitro* tube formation assay. Briefly, human umbilical vein endothelial cells (HUVECs) were expanded in EGM2 medium, resuspended in EBM or PVC conditioned EBM and seeded into a growth factor depleted matrigel coated well. Optimal tube formation conditions (50ng/mL VEGF + 10ng/mL FGF2 + 10% FBS in EBM) was used as a positive control, while EBM alone or fibroblast-conditioned EBM were added to the assay as a negative control. Cell-Tracker green-labeled FTM-PVCs were also co-cultured with HUVECs in a tube formation assay to determine if PVCs can incorporate in tube formation via direct interactions with HUVECs. Fibroblasts were used as control for this assay.

Results: We identified over 10 angiogenic factors including VEGFA, VEGFC, FGF1, FGF2, FGF5 expressed at the mRNA level by human umbilical cord-derived perivascular cells cultured in α MEM+10% FBS. When compared to basal media or fibroblast-conditioned media, serum-free PVC conditioned media enhanced tube formation by HUVECs, although not as effectively as optimal (50ng/mL VEGF + FGF + 10%FBS) tube formation conditions. Both FTM-PVCs and fibroblasts directly interacted with HUVEC networks when co-cultured in a tube formation assay, but a much larger proportion of FTM-PVCs directly integrated into HUVEC networks.

Conclusions: FTM-PVCs appear to have the capacity to support *in vitro* angiogenesis via both paracrine and direct cellular integration. Therefore, FTM-PVCs are a promising source of cells to support the *in-vivo* angiogenesis activity that would be essential for tissue regeneration in multiple disease and injury settings.

Primary Category Stem Cell Biology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 64 F6

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University of Undergraduate Student
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Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Human Umbilical Cord-derived Perivascular Cells Promote Wound Healing in an In vitro Model of Cardiomyocyte Injury

Abstract Keywords: Umbilical cord, perivascular cells, MSC, stem cell, cardiovascular regeneration

Précis:

Human umbilical cord perivascular cells are a promising candidate for cardiac repair.

Abstract:

Objective: We investigated the application of human umbilical cord perivascular cells from the first trimester (FTM-PVC) and term (TERM-PVC), both rich sources of multipotent MSCs, as supporting cell candidates for cardiac regeneration. During myocardial infarction (MI), local ischemia leads to loss of cardiomyocytes, and the defect is replaced by cell free, fibrotic scar tissue. The process often causes the decoupling of contractile fields in the heart muscle tissue which can lead to fibrillation, decreased cardiac output and potentially a secondary MI. A candidate cell for cardioplasty should (1) be able to functionally integrate into cardiomyocyte tissue without cytotoxic effects, (2) have multipotent characteristics and upregulate cell-cell connection related proteins and (3) contribute to the conductivity and contraction of injured heart muscle. Here, we aim to determine if FTM- and/or TERM-PVCs can integrate in cardiomyocyte cultures and promote reconnectivity in an *in vitro* model of cardiomyocyte injury.

Methods: All experiments were conducted with REB approval and following CACC guidelines. At least 3 independent lines of FTM and TERM-PVCs were tested. Primary neonatal rat cardiomyocyte tissue cultures were injured using a ‘scratch assay’. A cell tracker fluorescent dye-labelled PVC suspension was administered to cardiomyocyte cultures either before or after wounding. The obtained co-cultures were (a) imaged using time-lapse fluorescent microscopy to assess contractility, (b) dissociated and analysed by flow cytometry, and (c) processed for immunocytochemistry to visualize cell-cell connections and cytoplasmic content exchanges.

Results: Both FTM- and TERM-PVCs migrated towards the scratch injury sites and associate with injured cardiomyocytes. Migration after injury occurred more rapidly with the FTM-PVCs (approx. 3 days) vs. TERM-PVCs (approx. 5 days). Time lapse imaging indicated that PVC-connected cardiomyocyte fields eventually regained synchronized contractility within a few days after migration. Connexin43 was upregulated in co-cultured FTM-PVCs (30% positive) and TERM-PVCs (21% positive), and immunocytochemistry confirmed the membrane localization of connexin43 puncta, indicating gap junction formation. Furthermore, co-culturing cardiomyocytes with PVCs preloaded with gap junction transferable fluorescent dye revealed transfer of cytoplasmic content between the two cell types.

Conclusions: Based on these observations, both FTM- and TERM-PVCs are capable of integrating with injured rodent cardiomyocyte tissue, form functional connections with cardiomyocytes and restore conductivity between disjunct cardiomyocyte fields. Such abilities are valuable characteristics of a post-MI cell therapy candidate. Based on these promising results, we are further investigating the regenerative capacity of umbilical cord PVC’s by utilizing *in vivo* animal models, with the ultimate goal of moving to clinical trials.

Primary Category Stem Cell Biology
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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University of Toronto Trainee
Status for First (ie Presenting) Author: Graduate student
Presentation Preference: Poster

Abstract Title: Establishment and Application of Mice with Personalized Immune Systems; The “Real” Avatar

Abstract Keywords: Mice; Personalized; Immune System

Précis:

Functional immune system belonging to a specific individual can be developed in immunodeficient mice by taking advantage of current stem cell-based technologies.

Abstract:

Objective: We are proposing to generate mice with patient-specific, personalized immune system with fully functional, human thymus-educated T cells. The T cell “education” will take place in thymic epithelia, differentiated from the patients induced Pluripotent Stem Cells (iPSCs). Therefore, these mice will have a personalized immune system that can be used in patient-derived-xenograft (PDX) model to investigate human disease progression or test for efficient treatment in a completely functional patient-specific immune system.

Methods: Thymic epithelia progenitors (TEP), differentiated from patient-derived induced pluripotent stem cells (iPSC) *in-vitro*, will be co-transplanted into NOD/SCID/ γ immunodeficient mice with human CD34⁺ hematopoietic stem cells. Following transplantation, the function of the mature individual-derived TECs and individual-derived T cells will be evaluated.

Results: By mimicking cell signals during embryonic thymus development, we successfully differentiated pluripotent stem cells lines (human embryonic stem cells CA1 and human iPSC 110) into definitive endoderm cells, the first stage for TEPs generation. The cell markers, FOXA2, SOX17 and CXCR4 are identified through immunofluorescence, flow cytometry

analysis and qPCR.

Conclusion& Expectation: The co-transplantation of patient-derived thymic epithelia progenitors and hematopoietic stem cells into the NOD/SCID/ γ immunodeficient mice will contribute to the generation of mice with personalized immune system with fully functional, human thymus-educated T cells. Transplanted thymic epithelia progenitors will mature into thymic epithelia cells in-vivo. During the T cell development, mature and functional T cells will be generated under the positive and negative selection by thymic epithelia cells. These mice, as “real” avatars, will accelerate the understanding of human physiology and diseases at the patient specific level and contribute to the progress of personalized medicine.

Primary Category

for Abstract: Stem Cell Biology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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University of Toronto Trainee Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Qualitative analysis to establish verbal and non-verbal components of teaching skilled vaginal breech, non-rotational forceps and Kiellands deliveries

Abstract Keywords: education, vaginal breech, forceps, Kiellands

Précis:

Video recording of intricate simulated deliveries by experts allow for deconstruction of verbal and non-verbal components of these skills to create an educational tool

Abstract:

Objective: To identify verbal and non-verbal components of teaching skilled vaginal breech, non-rotational forceps and Kiellands deliveries through filmed demonstrations by skilled practitioners on mannequins

Methods: Ethics approval was obtained from the Research Ethics Board at three major teaching centres affiliated with the University of Toronto. Labour and delivery nurses, respiratory therapists, and residents anonymously identified practitioners (staff Obstetricians or Fellows) who they felt were skilled in forceps, Kiellands, and vaginal breech deliveries. Once identified, practitioners were consented and filmed performing these skills on a mannequin, describing their assessment and technique, and sharing clinical pearls based on their experience. Members of the research team independently reviewed the videos and recorded relevant teaching points; these were then grouped

to develop overarching themes. A document was generated and circulated between the skilled practitioners to establish consensus opinion.

Results: Thirty practitioners were identified as being skilled in one or more of these areas; twenty consented to participation. Initial qualitative analysis has identified the following common themes: the need for careful assessment of suitability and specific ways in which this is determined; the roles of the multidisciplinary team; the need for careful and appropriate communication with the patient and her partner; the delivery technique; red flags to indicate the need to stop when safety criteria cannot be met; and postpartum debriefing and documentation.

Conclusions: The identification of verbal and non-verbal components of teaching skilled operative and vaginal breech deliveries can be translated into a useful educational tool, which may improve the proficiency of trainees in these areas.

Primary Category Education
for Abstract:

Secondary Obstetrics
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 17 G1

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University of Clinical Fellow
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Status for First (ie
Presenting) Author:

Presentation Oral
Preference:

Abstract Title: Validation of the Generic Error Rating Tool (GERT) in gynecologic laparoscopy

Abstract Keywords: gynecology, laparoscopy, technical error, error analysis, surgical education

Précis:

The Generic Error Rating Tool allows objective and reproducible assessment of technical errors observed during gynecologic laparoscopy.

Abstract:

Objective: The Generic Error Rating Tool (GERT) was developed to assess technical errors during laparoscopic surgery. The aim of this study was to validate the GERT framework in gynecologic laparoscopy.

Methods: Video recordings of total laparoscopic hysterectomies were analyzed by two blinded observers using the GERT and the Objective Structured Assessment of Technical Skills (OSATS) scale. Primary outcomes were inter-rater reliability, test-retest reliability, construct and concurrent validity. Secondary outcomes were correlation of length of surgery with OSATS scores and total number of errors. Further, total number of errors within specific procedure steps were compared between high (OSATS $\geq$ 28) and low performers (OSATS

Results: Twenty videos were assessed Inter-rater and test-retest reliability was high (intraclass correlation >0.7) for total number of errors and events as well as in the majority of GERT task groups. Low performers made significantly more errors than high performers (median 61 errors (interquartile range 41.5-71.5) versus 32 errors (18-34), $p=0.002$). There was a significant correlation between individual OSATS scores and total number of errors (Spearman's Rho -0.85, p

Conclusion: GERT allows for objective and reproducible assessment of technical errors during gynecologic laparoscopy and can be used for performance analysis, training and quality improvement initiatives. (*IRB approval number: 12-032*)

Primary Category Education
for Abstract:

Secondary Gynecologic laparoscopy
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 27 G4

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University of Toronto Trainee Status for First (ie Presenting) Author: Medical Student

Presentation Preference: Poster

Abstract Title: Preliminary Quantitative Evaluation of Afya Jamii (Group Care) in Western Kenya

Abstract Keywords: Group care; antenatal; postnatal; maternal; infant;

Précis:

Evaluation of a group program for antenatal and postnatal care that was piloted in health facilities in Western Kenya shows no benefit on health outcomes.

Abstract:

OBJECTIVE: There is an increasing problem of maternal and infant mortality in Kenya. In response to this problem, the Primary Health Care Unit of the Academic Model for Providing Access to Healthcare (AMPATH) developed an innovative program for antenatal and postnatal care called Afya Jamii (community health). As part of Afya Jamii, women participate in a form of group care for antenatal and postnatal care. This program was piloted in communities in Western Kenya beginning in January 2013. The purpose of this study was to investigate the impact of Afya Jamii on maternal and child health outcomes at the five healthcare facilities where the program was implemented.

METHODS: We collected data from the five healthcare facilities on number of facility deliveries, total number of antenatal care visits, number of women attending antenatal care visits at less than 16 weeks and women attending more than four antenatal care visits in a given month. We ran t-tests to compare these values between 2012 (pre-implementation) and 2013 (post-implementation), specifically for the months of February, March, April and May.

RESULTS: There were no significant differences in maternal and child health outcomes between 2012 and 2013 for any of the five facilities ($p>0.05$).

CONCLUSIONS: The quantitative analysis of Afya Jamii suggests that there are no significant benefits of program implementation on maternal and child health outcomes. It is possible that no significant differences were seen because the sample size in this analysis is small ($n=3$ or 4). It is also possible that the benefits of Afya Jamii will be seen with qualitative program evaluation.

Primary Category for Abstract: Global Women's Health

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 58 G3

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University of Toronto Trainee Medical Student

Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: The relationship between perceived stigma, social support and quality of life in single mothers by choice

Abstract Keywords: mental health, quality of life, determinant of health

Précis:

This study on 22 single mothers by choice demonstrates that a higher perceived stigma is associated with less social support and poorer quality of life.

Abstract:

Objective: The use of donor sperm is a reproductive option for single mothers by choice (SMC). Despite a rising numbers of SMC, SMC is still a minority group in the general population who may face various social stigmata. Negative public opinions may cause SMC to feel that they are being labeled, stereotyped or judged. Such internal responses to external social and moral pressures are often referred to as “perceived stigma”. Adverse effects of perceived stigma on health have been reported in multiple studies in other populations. Therefore, the aims of this study were to evaluate the level of perceive stigma in SMC and to examine its relationship to social support and quality of life (QoL).

Methods: This study received institutional REB approval. A correlation research design was utilized. Target populations were single women who underwent assisted reproductive using donor sperm or plan to do so, SMC who have undergone donor sperm insemination in the past, or who are currently undergoing this process at the CReATe Fertility Center were recruited by email to complete an online anonymous survey. The survey consists of questionnaires measuring perceived stigma (adapted from Explanatory Model Interview Catalogue Stigma Scale and Stigma Conscious Questionnaire), social support (Multidimensional Scale of Perceived Social Support scale) and fertility related QoL (adapted from FertiQoL, a fertility QoL tool which is a reliable measure of the impact of fertility problems on QoL). Data were analyzed using Spearman’s correlations.

Results: Twenty-two responses have been collected and analyzed. The average perceived stigma among SMC is 0.97 ± 0.43 (mean $\pm$ standard deviation), on a scale of 0-3 with 3 being the highest perceived stigma level. The average social support level is 5.40 ± 1.12 , on a scale of 1-7 with 7 being the best social support. The average QoL is 3.79 ± 0.45 , on a scale of 1-5, with 5 being the best QoL. Perceived stigma was negatively correlated with social support (correlation coefficient (r_s) = -0.49, $p < 0.05$) and QoL (r_s = -0.67, $p < 0.001$). Meanwhile, social support was positively correlated with QoL (r_s = 0.57, $p < 0.001$).

Conclusions: The study demonstrates that a moderate level of perceived stigma exists in SMC. Moreover, SMC who perceive greater stigmatization report less social support and lower QoL. Thus, stigma and its implications on health should be considered when supporting SMC.

Funded by: CReATe Fertility Centre

Primary Category Health Care Delivery
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 78 G6

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University of Toronto Trainee Medical Student
Status for First (ie Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Chama cha MamaToto: Evaluation of a Peer Support Mechanism to Improve Maternal and Infant Health in Western Kenya

Abstract Keywords: Maternal Health, Infant Health, Public Health, Global Health, Primary Care, Peer Education

Précis:

The current study evaluates the effectiveness of a peer support and education program implemented in Western Kenya aimed at improving maternal and infant health.

Abstract:

OBJECTIVE: Maternal mortality is the leading cause of death among women of childbearing age in Kenya. Improving maternal and infant health in Kenya is one of AMPATH's (Academic Model Providing Access to Healthcare) key priorities. In an effort to improve access to education and peer-support for pregnant and breastfeeding mothers, AMPATH implemented 16 community-based mother and infant health groups in western Kenya in September 2012, known as Chama cha MamaToto (chamas). The objective of the current study is to evaluate the effectiveness of the Chama cha MamaToto project in improving maternal and infant health in the Bunyala district.

METHODS: Pregnant women enrolled in the chamas will be compared to a matched group of women, not enrolled in chamas, who attended their first antenatal care (ANC) visit between October and December 2012. Subjects will be matched for age, gravidity and previous facility delivery. Data collection began in July 2013 using Government of Kenya health registries at each of the 8 health facilities in the Bunyala district. Data was collected on (1) the number women delivering in a facility, (2) total number of ANC visits, (3) number of infants receiving first Oral Polio Vaccine (OPV), and (4) the median duration of exclusive breastfeeding. In addition, focus group discussions were conducted with: (i) women enrolled in chamas, (ii) women not enrolled in chamas, (iii) community health volunteers and (iv) district health officials.

RESULTS: Data on a total of 357 chamas women and 409 non-chamas women are included in the evaluation to date. Analysis has not been completed as data collection is ongoing and focus group discussions are being translated and transcribed. The current project established the database and methodology for continuing data collection.

CONCLUSION: While we are not yet able to draw any conclusions about the impact of the Chama cha MamaToto project, we hope to show that women who participated in the chamas group are more likely to choose skilled birth attendance and access facility services including antenatal, delivery, postnatal and well-child services. Results from this evaluation will inform future AMPATH interventions aimed at improving maternal and infant health in western Kenya.

Primary Category Global Women's Health
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 59

G5

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**University of
Toronto Trainee
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Presenting) Author:
Presentation**

Graduate student

Preference:

No Preference

Abstract Title:

The Community Health Volunteer Incentive Project

Abstract Keywords:

primary health care, health systems, community health
volunteers, lay health workers

Précis:

CHVs are motivated by a combination of individual, community, and organizational factors, in addition to monetary incentives that blur boundaries between volunteerism and employment.

Abstract:

Objective: Health service organizations in low and middle income countries (LMICs) have incorporated community health volunteers (CHVs) into primary health care (PHC) to facilitate program implementation. In the context of western Kenya, the Academic Model Providing Access to Healthcare (AMPATH) supports the Kenyan MOH in the provision of primary care activities by giving CHVs an individual compensation of \$25 CDN per month. This study between May and August 2013 aimed to better understand the role of stipends in motivating AMPATH supported CHV's, and inform a more sustainable model for AMPATH's PHC program, given a planned change in stipend that was introduced in September 2013.

Methods: This study was a qualitative research design that utilized four focus group discussions (FGDs) and interviews with 42 Government of Kenya AMPATH-supported CHVs, and key informant interviews with paid AMPATH staff that work closely with CHVs. FGDs with CHVs were conducted where participants were purposefully selected to stratify CHVs by gender, performance level, and distance of community unit to level-four district hospitals. Simultaneously, eight AMPATH staff were purposefully selected for their diverse experience and proximity to CHVs. Qualitative thematic analysis was conducted across all collected data through coding and sub-coding.

Results: The findings from this study confirmed that AMPATH supported CHVs are influenced by a combination of individual, community, and organizational factors that keep them engaged in their CHV activities. Moreover, the stipend and its importance in meeting basic necessities of CHVs was found to be a significant motivating factor. However, the stipend, in addition to other AMPATH policy blurred CHVs' boundaries between the role of volunteerism and employment. With respect to the upcoming stipend change, CHVs had varying reactions, both positive and negative.

Conclusions: Based on the findings of this study, several key recommendations were proposed, primarily surrounding the provision of frequent training and materials to facilitate the completion of duties, in addition to clarity on the role of, and support provided by AMPATH during the transition period.

Primary Category

for Abstract: Health Care Delivery

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 82 H6
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University of Toronto Trainee
Status for First (ie Presenting) Author: Graduate student
Presentation

Preference: Poster

Abstract Title: Age-Associated Elongation of Telomere Length in Human Spermatozoa

Abstract Keywords: spermatozoa, telomere, aging, infertility, spermatogenesis

Précis:

Telomeres in human sperm demonstrate age-associated increase in length which may play a role in paternal contribution of longevity. Further studies are currently in progress.

Abstract:

Objective: Telomeres perform roles essential to stabilization and protection of DNA, and are indicative of cellular replicative capacity. In spermatozoa, telomeres are elongated and hypothesized to support subsequent cellular divisions in spermatogenesis and embryo development. The purpose of this study was to determine if male fertility is characterized by an optimal telomere length in spermatozoa which may influence successful fertilization, embryo development, implantation, and pregnancy in patients undergoing IVF treatment.

Methods: Left over semen samples were collected following therapeutic IVF procedures. Sperm were assessed using Computer-Assisted Semen Analysis (CASA) and stored at -80°C. DNA was isolated using the Genomic Tip 20/G Kit (Qiagen) with minor modification to cell lysis. DNA was separated using anion exchange tips according to the manufacturer's recommendations. DNA was dissolved in DNA hydration solution and frozen at -80°C. A telomere/single copy gene (T/S) ratio was generated using multiplex qPCR according to Cawthon (2002) using *telc* and *telb* primers from Cawthon (2009) and albumin as the single copy gene. Patient samples were normalized to a standard sperm DNA sample for relative telomere length measurement. Sperm T/S ratios were correlated with semen parameters, age, fertilization, embryo development,

implantation, and pregnancy.

Results: At the time of submission, 21 samples have been evaluated. Sperm telomere length showed a significant positive relationship with male age ($r = 0.49$, $p = 0.03$). Sample size expansion is underway to correlate sperm telomeres with other variables of interest. Power analysis on the current dataset revealed a minimum requirement of 90 samples to achieve statistical significance.

Conclusions: These preliminary findings confirm the phenomenon of sperm telomere elongation with increasing male age, which was also observed by other groups (Joregenson 2013, Ferlin 2013). Given the reasonably stable fertility of men with aging, telomere elongation has been proposed as a mechanism by which offspring could inherit increased longevity. Through this confirmation, we can also conclude that the qPCR method is reliable for correlation of sperm telomeres with other variables of interest.

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Primary Category

for Abstract: Infertility, Male infertility

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Status for First (ie Presenting) Author:
Presentation Poster
Preference:
Abstract Title: A Human Umbilical Cord-Derived Perivascular Cell Feeder Culture System for the Ex-Vivo Propagation of Spermatogonial Stem Cells.
Abstract Keywords: HUC-PVCs, SSC, feeder , serum-free media
Précis:

HUC-PVCs express molecules that could render them useful for *ex-vivo* applications in male fertility preservation and/or infertility diagnosis and treatment.

Abstract:

A Human Umbilical Cord-Derived Perivascular Cell Feeder Culture System for the *Ex-Vivo* Propagation of Spermatogonial Stem Cells.

Objective: Our overall aim was to develop a strategy for fertility preservation for pre-pubertal boys needing to undergo gonadotoxic therapies. The objective of this study was to determine whether human umbilical cord-derived perivascular cells isolated from the first trimester (FTM-PVC) or term (TERM-PVCs) umbilical cord could be used as a novel human cell feeder-based system for the ex-vivo expansion of spermatogonial stem cells (SSCs).

Methods: All work was conducted with REB approval and following CACC guidelines. The paracrine factor gene expression profile of FTM-PVC- and TERM-PVCs (N=3 (passage 4) for each cell type) was determined using a growth factor- and cytokine-focused gene array (Sabiosciences). ELISA was used to detect BMP4, BMP6 GDNF and LIF secretion in PVC-conditioned media. SSCs from neonate and adult mouse testis were isolated and cultured in serum-free media supplemented with a previously established cocktail of growth factors and hormones using three types of feeder conditions: 1) mouse embryonic fibroblasts (MEFs) 2) FTM-PVCs or 3) TERM-PVCs. The number of colonies growing on each feeder type was counted over 3 passages. SSC cultures were immunostained for the SSC associated markers SSEA4, GPRa1, GPR125, CD49f and the spermatid-specific marker SCP3. Each marker was analyzed by immunocytochemistry (ICC) and flow cytometry (FC) to determine the effect of PVC co-culture on the maintenance of SSC characteristics.

Results: BMP4, BMP6, BMP9, TGFb1, GDNF, EGF, FGF2, and LIF are expressed at the mRNA level by both FTM- and TERM-PVCs. Using ELISA, we detected high levels of BMP4, GDNF

and LIF in PVC conditioned media. No differences were observed in the number of neonatal or adult mouse SSC colonies expanded on either of the two types of PVC feeder layers or with MEFs. Our preliminary data also suggests that mouse SSCs maintain their stem cell characteristics when expanded on mitomycin-inactivated PVC feeders.

Conclusions: PVCs express many factors that could support and regulate SSC maintenance. Neonatal and adult mouse SSC colonies were expanded on both FTM and TERMPVC feeders as efficiently as on traditional MEFs. If similar results are obtained in our future experiments utilizing human SSCs, this novel system could be used as part of a clinically-viable approach for fertility preservation strategies in pre-pubertal boys undergoing gonadotoxic therapies and/or for fertility treatment of non-obstructive azoospermia.

Primary Category for Abstract: Stem Cell Biology

Secondary Category for Abstract: Male Infertility

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 54 H4

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University of Toronto Trainee Status for First (ie Presenting) Author: Clinical Fellow

Presentation Preference: No Preference

Abstract Title: IVF Success Rates in Patients Who Have Previously Undergone Surgical Therapy for Endometriosis is Correlated with the Disease Stage.

Abstract Keywords: endometriosis, IVF, pregnancy, ASRM revised staging, surgery, laparoscopy, control group, confounding factors, stage outcome, age

Précis:

IVF outcome in patients with endometriosis who have undergone prior surgical treatment decreases with increasing stage (severity) of the disease.

Abstract:

OBJECTIVE: To determine whether IVF outcomes post laparoscopic treatment are affected by surgical stage at diagnosis.

BACKGROUND: Endometriosis is a common disorder affecting fertility. After surgical diagnosis, endometriosis is classified into: minimal (Stage 1), mild (Stage 2), moderate (Stage 3) and severe (Stage 4) according to spread of disease and sites involved (ASRM Classification). Fecundity decreases with increasing severity of disease. Success rates achieved with IVF in women with endometriosis (all stages) is 20-40% less than that achieved in women with tubal disease. Surgical treatment of minimal and mild endometriosis has been found to improve natural pregnancy rates [2], however studies have shown a decrease in number of oocytes retrieved, fertilization, implantation and pregnancy rates in women with severe endometriosis (Stage 3 and 4) in comparison to mild disease (Stage 1 and 2) [3]. Based on the literature it is unclear whether patients with different stages of endometriosis have a different IVF outcome, stage per stage, after surgical diagnosis and treatment. Since evidence suggesting that extensive surgery for patients with advanced or severe endometriosis may have a negative outcome on ovarian reserve and future reproduction [4]; more physicians manage severe endometriosis without extensive surgery.

MATERIALS AND METHODS: Retrospective chart review of 197 patients with laparoscopically diagnosed and treated stages 1-4 endometriosis (ages 18-45, between Jan 2009 and Dec 2012) who underwent IVF for infertility compared to 104 control patients (tubal or unexplained infertility, ages 18-45, between Jan 2009 and Dec 2012) who also underwent IVF. Patients were divided according to their stage of endometriosis. . Outcome data included: IVF outcomes (days of stimulation (DOS), total gonadotropin dosage, peak E2 level, #oocytes retrieved, fertilization rate, implantation rate (IR), clinical and ongoing pregnancy rate (CPR/OPR), and miscarriage rate). Logistic regression analysis was used to control for confounding factors.

RESULTS: 197 endometriosis patients were classified by stage after surgery (52 Stage 1, 58 Stage 2, 59 Stage 3, 26 Stage 4). Progressive stages of endometriosis (from Stage 1 to 3) were associated with lower CPR after IVF (Stage 1-4 vs control; $p=0.07$, 0.014 , 0.003 , 0.64 respectively) despite no differences in DOS, peak E2 levels, and # of dominant follicles. Stage 4 CPR did not reach statistical significance, likely due to small sample size as well as less invasive surgery.

CONCLUSIONS: Our data suggests that IVF outcome decreases with increasing severity of endometriosis in those women who underwent surgical treatment prior to IVF.

Primary Category Infertility
for Abstract:

Secondary endometriosis
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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University of Toronto Trainee Status for First (ie Presenting) Author: Clinical Fellow

Presentation Preference: Poster

Abstract Title: Prediction of Oocyte Yield after Administration of a Gonadotropin-Releasing Hormone (GnRH) Agonist Trigger

Abstract Keywords: Gonadotropin-Releasing Hormone Agonist, Ovarian Hyperstimulation, In Vitro Fertilization, Oocyte Retrieval

Précis:

A retrospective chart review demonstrating that LH levels after administration of a GnRH agonist trigger are positively correlated with oocyte recovery rates in IVF.

Abstract:

Objective: Ovarian hyperstimulation syndrome (OHSS) is a potentially life-threatening complication of *in vitro* fertilization (IVF). The use of gonadotropin-releasing hormone (GnRH) agonists to trigger oocyte maturation reduces the risk of OHSS, compared to standard trigger with human chorionic gonadotropin (hCG). hCG has a long half-life and a sustained effect on the corpora lutea; whereas, GnRH agonists induce a short-lived endogenous LH surge that leads to oocyte maturation, followed by pituitary suppression and luteolysis. However, as the experience with GnRH agonist triggers is still developing, evidence on clinical outcomes is limited. More worrisome are several reports of empty follicle syndrome (EFS) after GnRH agonist trigger, in which no oocytes were retrieved despite the presence of follicles on ultrasound. To try to predict failed response to GnRH agonist trigger, many clinicians measure post-trigger LH and progesterone to confirm that an endogenous surge has occurred. However, it is unclear what levels are adequate. The objective of this study was to determine if LH and progesterone levels after administration of GnRH agonist trigger are predictive of oocyte maturation and yield.

Methods: This study was a retrospective chart review conducted at the MSH Centre for Fertility and Reproductive Health. All autologous and oocyte donation cycles using a GnRH antagonist protocol and a GnRH agonist trigger between January 1 and December 31, 2013 were included. Oocyte maturation was induced with buserelin 0.5 mg s.c. if patients were deemed to be at high

risk for OHSS or were undergoing IVF for oncofertility or oocyte donation purposes. LH and progesterone levels were measured on the day of trigger and 8-12 hours after GnRH agonist administration. Primary outcome was the total number of oocytes retrieved. Secondary outcomes included oocyte recovery rate (number of oocytes retrieved/follicles ≥ 15 mm), proportion of mature oocytes, and fertilization rate. Pearson correlations were used to determine if post-trigger LH and progesterone correlated with oocyte yield and outcomes.

Results: A total of 83 cycles met inclusion criteria. Two cycles were excluded because post-trigger LH and progesterone levels were unavailable. The mean post-trigger LH level was 66.8 IU/L (SD: 34.0; range 10-180) and progesterone level was 24.7 nmol/L (SD: 15.4; range 5-71). No incidents of EFS were reported. Post-trigger LH level was positively correlated with oocyte recovery rate ($r = 0.23$, $p = 0.04$).

Conclusions: Measurement of LH and progesterone levels after administration of GnRH agonist trigger are important to ensure that an LH surge and luteinization have occurred. Post-trigger LH levels are predictive of oocyte recovery.

Primary Category Infertility
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 80 H2

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Status for First (ie
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Presentation Poster

Preference:

Abstract Title: Development of Next Generation Sequencing (NGS) for Preimplantation Genetic Screening (PGS) of Human Embryos for Aneuploidy

Abstract Keywords: NGS, PGS, aneuploidy, human embryo, TE cells

Précis:

Our preliminary results using NGS technology for detection of aneuploidy shows great promise for a cheaper, more rapid method for clinical PGS in the future.

Abstract:

Objective: Next-Generation Sequencing (NGS) technology is a novel and powerful technology. Its use for aneuploidy testing of human embryos has yet to be developed and validated. Array Comparative Genomic Hybridization (aCGH) is also a relatively new tool for aneuploidy detection and screening of TE cell from human embryos, thus its accuracy requires further validation. The first objective of this study was to assess whether aCGH analysis in our lab were concordant with the results from an outside reference lab. The second objective was to develop an NGS protocol for aneuploidy detection in our lab and compare the results with aCGH.

Methods: This research had institutional REB approval. All patients (33-43 y/o) (n=11) attended CReATe Fertility Centre and signed the appropriate informed consents to participate. Embryo TE biopsy was performed on Day 5 or 6 at CReATe. aCGH analysis for aneuploidy was performed by a reference PGS Laboratory (Illumina UK) and the CReATe PGS Laboratory on the same amplified DNA. Both centers used the 24Sure™ V3 platform (BlueGnome Ltd, UK) developed by Illumina, UK. NGS using sequencing by synthesis with the Ion Torrent (Life Technologies) was used to develop and optimise an aneuploidy testing technique in our laboratory. In order to develop NGS for aneuploidy screening, excess amplified DNA from the CReATe PGS Lab (n=7) was used for NGS aneuploidy testing. Statistical analysis was performed using chi-square testing.

Results: There was 100% correlation between the results from CReATe and the reference laboratory. All samples tested with NGS (7/7) were 100% concordant with aCGH testing.

Conclusions: The 100% concordance of our aCGH lab with the company's reference lab helped to validate our own laboratory testing methodology. Our very exciting preliminary NGS results for PGS analysis correlated well with aCGH testing. If NGS technology can be developed to be more rapid, efficient and cost effective than aCGH, it could become the future standard for clinical PGS testing.

Primary Category Infertility
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 85 H5

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Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: The relationship between gender role identity and quality of life in men experiencing infertility

Abstract Keywords: Infertility, male, quality of life, gender role identity,

Précis:

This study is looking at the relationship between gender role identity and quality of life in men experiencing infertility

Abstract:

Background: Infertility can have a negative impact on several aspects of an individual's life such as sexual satisfaction, marital satisfaction and overall psychosocial well-being. Studies have identified gender role identity as a predictor of the psychosocial impact of infertility. However, the majority of literature has so far focused on the female experience of infertility. Therefore, the goal of this study is to further the understanding of the effect of gender role identity of the impact of infertility in the male population.

Methods: A quantitative cross-sectional study will be conducted at the CReATe fertility centre. The participants will fill out a survey consisting of a demographics questionnaire, the Bem Sex Role Inventory Questionnaire (BSRI), and the Fertility Quality of Life Questionnaire (FertiQoL). The BSRI allows the classification of participants into one of four gender role groups (masculinity, femininity, androgyny, undifferentiated); and FertiQoL is used internationally to measure fertility quality of life in men and women experiencing fertility problems.

Results: Currently, seven complete surveys have been completed. The questionnaires were scored, and Spearman's Correlation was used to evaluate trends that may exist between gender role and quality of life. There was a slight negative correlation between masculinity and mind/body (-0.04) quality of life that existed around a zero value, suggesting that this response was primarily androgynous. Although there was a negative correlation between masculinity and emotional (-0.24) and relational (-0.18), these were weak correlations, suggesting an undifferentiated or androgynous behaviour in these respective categories. However, a strong positive correlation existed between masculinity and the participant's social quality of life (0.92). The overall perceived treatment (0.85) and fertility quality of life (0.65) were positively correlated with masculinity.

Conclusion: Males that ranked higher on BEM gender role identity scale were more likely to be associated with a greater quality of life. If a certain gender role group is identified as more vulnerable to fertility-related distress, a screening program can be implemented using the BSRI to offer more counselling to those patients that are susceptible to more distress.

Funded by: CReATe Fertility Centre

Primary Category Infertility
for Abstract:

Secondary Male Infertility
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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University of Toronto Trainee Status for First (ie Presenting) Author: Resident

Presentation Preference: Poster

Abstract Title: The impact of adoption of the IADPSG criteria for the screening and diagnosis of gestational diabetes

Abstract Keywords: Gestational diabetes, diagnosis, screening, criteria

Précis:

Changing the current CDA GDM diagnostic thresholds to that recommended by the IADPSG, increased incidence by 222% and identified a subpopulation at risk of adverse pregnancy outcome.

Abstract:

Objective: To compare the International Association of Diabetes in Pregnancy Study Group (IADPSG) and the Canadian Diabetes Association (CDA) criteria for the diagnosis of gestational diabetes.

Methods: A retrospective cohort study involving all pregnant women who underwent screening for GDM at a tertiary medical center between 2008 and 2011. Diagnosis of GDM during the study period was based on the CDA 2008 recommendations of universal screening with a 50g-oral glucose challenge test (GCT, threshold 7.8 mmol/L) and a diagnostic test using a fasting 2-hour 75g-oral glucose tolerance test (OGTT). Diagnosis of GDM required the presence of ≥ 2 abnormal values, while a single abnormal value was diagnostic of impaired glucose intolerance (IGT). Since the OGTT thresholds based on the IADPSG criteria are lower than the CDA 2008 thresholds (5.1 mmol/L, 10.0 mmol/L, and 8.5 mmol/L), we identified a group of women who would have been diagnosed as GDM based on the IADPSG criteria, but not the CDA 2008 criteria (OGTT-IADPSG group). The pregnancy outcome of that group, as well as that of women with a positive OGTT according to the CDA 2008 criteria (OGTT-CDA group) and women with a negative OGTT (OGTT-NEGATIVE group) was compared to that of a control group consisting of women with a negative GCT test (GCT-NEGATIVE group).

Results: Overall 5,429 women were eligible for the study, of which 4,183 were included in the GCT-NEGATIVE group, 526 in the OGTT-NEGATIVE group, 155 in the OGTT-IADPSG group and 385 in the OGTT-CDA group. Applying the IADPSG criteria to the study population would increase the rate of GDM from 3.2% (7.3% when including IGT) to 10.3%. The majority of the

increase in the rate of GDM was attributed to the use of a single abnormal value to define GDM (5.3% increase) rather than the use of lower threshold values (1.8% increase). Out of the 3 threshold values - the lower 1-hour threshold was the most significant contributor to the higher GDM rate. A positive OGTT in both the OGTT-IADPSG group and the OGTT-CDA group was independently associated with a higher rate of the composite adverse outcome (OR=1.4, 95%-CI 1.1-1.9).

Conclusion: The use of the IADPSG criteria instead of the CDA criteria would result in a considerable increase in the rate of GDM, but also appears to identify additional women at similar risk of adverse pregnancy outcome.

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Gestational Diabetes
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 20 I4

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University of Resident
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Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Pregnancy Outcomes of Women Admitted to a Tertiary Care Centre with Short Cervix

Abstract Keywords: short cervix, preterm birth, management, cerclage

Précis:

The first week following recognition of a short cervix in the 2nd trimester does not appear to present a high risk time for delivery.

Abstract:

Objective: The role of in-patient management of women with short cervix during the pregnancy is not known. Our aim was to characterize the management and outcome of women admitted to a tertiary high-risk obstetrics unit with short cervix (≤ 25 mm, as measured on transvaginal ultrasound (TVS)), and to determine the latency period from diagnosis to delivery.

Methods: A retrospective chart review of women admitted to the High Risk Obstetrics Unit at Sunnybrook Health Sciences Centre between 2005-2011 with short cervix on TVS was done. Information regarding the latency to delivery as well as clinical history that may be relevant was collected and analysed.

Results: Data were available for 119 women admitted for short cervix between 2005-2011 (N=59 singletons; N=55 twin gestations; N=5 triplets). The median latency to delivery from admission was 61.0 days (mean 61.4 days, range 2-143 days); the median gestational age at delivery was 34.7 weeks (mean 33.7, range 21.2-41.6 weeks). Only 6.0% of women delivered within one week of admission for short cervix; 23.5% of women delivered prior to 32 weeks gestational age. When stratified by the number of fetuses, we found that twin gestations had a significantly shorter latency time to delivery compared to singletons (median= 54.0 vs 72.0 days; $p=0.01$). Among asymptomatic women with a singleton pregnancy (i.e. no contractions) who did not undergo a cerclage placement, the median time to delivery was 67.0 days but 31% of these women delivered prior to 32 weeks. Women with a singleton gestation who underwent a cerclage stayed in hospital for less time (p

Conclusions: Only small proportion of women with short cervix will deliver within a week of admission and the majority will have a long latency period until delivery. Cervical cerclage was associated with a shorter antepartum length of stay among singletons. These findings have implications from both a patient care and health economics perspective. By improving our understanding of the prognosis of patients with short cervix, patient counselling and management as inpatient vs. outpatient can be optimized.

Primary Category Maternal-Fetal Medicine
for Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 23 I5

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University of Graduate Student
Toronto Trainee
Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Characterizing the protein expression and localization pattern of myometrial MMPs throughout pregnancy, labour and post-partum in rats

Abstract Keywords: myometrium, matrix metalloproteinases, pregnancy, term labour, post-partum, myometrial inflammation

Précis:

Protein expression/activity of specific MMPs is up-regulated in uterine smooth muscle during labour, post-partum, and is expressed by both myometrial cells and infiltrated macrophages.

Abstract:

Objective: It is widely accepted that normal term labour is an inflammatory process. Cells of the uterine smooth muscle (myometrium) and activated immune cells can produce extracellular matrix-degrading proteases, matrix metalloproteinases (MMPs), which affect the function of cellular barriers and cellular behavior. We hypothesize that during late pregnancy, the expression/activity of MMPs increase, contributing to increased infiltration of immune cells into the uterus and promoting myometrial inflammation. To test this hypothesis we 1) measured the expression and activity of MMP proteins using *in vivo* rat models and 2) examined the localization of MMP expression by myometrial smooth muscle cells and resident macrophages using immunofluorescence in conjunction with *in situ* zymography.

Methods: Myometrial tissues from pregnant rats were collected throughout gestation, during labour (d23) and post-partum (d1PP and d4PP). Total protein was extracted for analysis of MMP expression by western blot and gelatin zymography analysis. Whole uteri were collected, zinc-fixed and paraffin embedded to analyze the cellular localization of protease activity using *in situ* zymography. In addition, immunohistochemical analysis of macrophage tissue localization and their MMP expression were assessed by immunofluorescent staining for CD68 in conjunction with *in situ* zymography.

Results: In accordance with gene expression results, gelatin zymography demonstrated an increase in active-MMP2 activity during the PP period, however MMP9 activity was undetectable. Western blot analysis of pro-MMP7 and active MMP11 proteins indicated a steady increase in expression throughout gestation and culminated during term labour. Preliminary *in situ* zymography analysis of zinc-fixed myometrial tissues from gestational day 23 (labour) and d1PP indicated that 1) prior to and during term labour, gelatinase expression was localized intracellularly to the perinuclear region of the myometrial cytoplasm, however 2) during the early postpartum period, gelatinase expression was highly up-regulated extracellularly in the myometrial parenchyma. Co-immunostaining for CD68 indicated that macrophages infiltrated into the myometrium also expressed gelatinases.

Conclusion: Analysis of protein expression/activity for active MMP2 showed a correlation with gene expression. Preliminary localization analysis indicated that both myometrial cells and tissue macrophages express gelatinase proteins at late gestation and during term labour. However, the functional gelatinase activity was only found in the extracellular space during post-partum period which supports the role of MMPs in promoting tissue remodelling during uterine involution.

Funded by CIHR: MOP-37775

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Basic Parturition
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 52 I6

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Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: A Combination of Single Nucleotide Polymorphisms in the 3'Untranslated
Region of HLA-G is Associated with Preeclampsia

Abstract Keywords: HLA-G, preeclampsia, human leukocyte antigen, SNPs

Précis:

The 3'UTR of HLA-G has a SNP combination that is correlated with the development of
preeclampsia, and these SNPs could affect HLA-G mRNA levels.

Abstract:

Objective: The aim of this study was to determine whether a single nucleotide polymorphism
(SNP) by itself or in combination with other SNPs in the 3' untranslated region (3'UTR) of the
human leukocyte antigen-G (HLA-G) gene is associated with an increased risk of preeclampsia.

Methods: Placenta samples were obtained from 47 preeclamptic and 47 control cases. Control
cases included individuals who had uncomplicated pregnancies and delivered after 37 weeks of
gestation. DNA was extracted from each sample, and the 3'UTR of the HLA-G gene was
sequenced and analyzed for polymorphisms using different genetic models of inheritance.
Mutations that were found to be correlated with preeclampsia samples were used in an *in vitro*

model. The 3'UTR of HLA-G was inserted into an HLA-G expression vector and site-directed mutagenesis is being performed to create genetic clones that either do or do not contain the mutations identified. These vectors were expressed in SP2/0 cells that lack endogenous HLA-G. HLA-G mRNA stability analysis and protein levels will be measured using quantitative PCR and ELISA respectively.

Results: Preeclamptic cases were significantly associated with a G/G genotype at SNP 3187 (accession number rs9380412) using an additive model of inheritance ($p=0.04$). One SNP combination (+3027C/C and +3187G/G) was significantly more prevalent in preeclampsia cases using co-dominant ($p=0.001$) and dominant ($p=0.003$) models. We are currently performing the in vitro assays described above to determine if the presence of the polymorphisms alone, or in combination, have a significant effect on HLA-G mRNA stability.

Conclusions: This data suggests that these HLA-G 3'-UTR SNP associations, either alone, or in combination with other biomarkers, could be useful in a future predictive test for the susceptibility to preeclampsia.

Funded by: Canadian Institutes of Health Research Grant (MOP93593)

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Preeclampsia
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 90 I1

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**University of Toronto
Trainee Status for First (ie
Presenting) Author:**

Clinical Fellow

Presentation Preference:

Oral

Abstract Title:

Cord Occlusion in Complicated Monochorionic Multiple
Pregnancies: Comparison of Techniques

Abstract Keywords:

Cord occlusion, radiofrequency ablation, bipolar coagulation, laser
occlusion, TRAP, TTTS, sIUGR

Précis:

Different methods are available for selective reduction in monochorionic pregnancies, in our experience radiofrequency ablation appears to be the fastest procedure with the least complications

Abstract:

Background: Several techniques are available for selective termination in monochorionic (MC) pregnancies discordant for a fetal anomaly or growth, acardiac twins or pre-terminal TTTS.

Objective: To compare procedure time and efficacy of different methods of cord occlusion in complicated MC pregnancies.

Methods: Single centre retrospective cohort study of all MC pregnancies discordant for a severe abnormality undergoing selective cord occlusion from Aug 1997 to Jan 2014. Statistical analysis included calculation of means, standard deviation, median and range.

Results: Indications for cord occlusion in 71 cases (4 sets of triplets) were: acardiac twin (31), discordance for a major fetal anomaly (27), TTTS with one significantly compromised twin (13). We used 6 techniques: cord ligation (CL) (1), unipolar cautery (UC) (1), bipolar cautery (BC) (9), laser occlusion, ultrasound guided or fetoscopic, (LO) (14), radiofrequency ablation (RFA) (46). Overall co-twin survival was 84.5% (60/71). PPRM (

Conclusion: Cord occlusion should be considered in MC pregnancies when one fetus faces either predictable death or is discordant for a major anomaly. In our experience, RFA is technique of choice for selective termination in complicated MC pregnancies as it requires a small instrument. It is also the fastest procedure, with the least complications. The co-Twin Survival is 87%. RFA shows a tendency towards the longest latent interval to delivery.

Table 1

		RFA*	BC†	LO‡
GA at procedure (wks)	Mean ± SD**	20 ± 4.5	20.1 ± 2.1	21.2 ± 3.9

GA at procedure (wks)	Median (range)	18.4 (15-33.6)	21 (15.6-22.1)	21.5 (14.7-29)
PPROM (	% (n)	19.6 (9/46)	22.2 (2/9)	28.6 (4/14)
Failure of Procedure	n	1	2	2
Co-twin Survival	% (n)	87.0 (40/46)	88.8 (8/9)	71.4 (10/14)
Procedure time (mins)	Mean $\pm$ SD**	26.8 $\pm$ 14.1* <i>p</i> 85 $\pm$ 41.0 91.8 $\pm$ 40.3 Procedure time (mins) Median (range) 24.5 (9-73) * <i>p</i> 84 (31-150) 100 (55-180) GA at delivery (wks) Mean $\pm$ SD** 34.1 $\pm$ 6.5 33.3 $\pm$ 5.6 31.2 $\pm$ 6.3 GA at delivery (wks) Median (range) 37.0 (17-41) 35.4 (24-40) 30.9 (20-40) Interval to delivery (days) Mean $\pm$ SD** 99.0 $\pm$ 53.3 92.4 $\pm$ 43.1 70.5 $\pm$ 52.5 Interval to delivery (days) Median (range) 110 (2-173) 101 (28-146) 87 (0-140) *RFA=radiofrequency ablation †BC=bipolar cautery ‡LO=laser occlusion **SD=standard deviation Primary Category for Abstract: Maternal-Fetal Medicine Supervisor Approval: Yes, My Supervisor has approved Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose		

Abstract - ID: 60

I2

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**University of
Toronto Trainee
Status for First (ie
Presenting) Author:
Presentation**

Graduate student

Preference:

No preference

Abstract Title:

Sphingosine-1-Phosphate (S1P) and Regulation of Drug
Transporter (P-glycoprotein) Activity in the Developing Blood-
Brain Barrier

Abstract Keywords:

Blood-brain barrier, multidrug resistance transporters, in vitro,
brain development, sphingolipids

Précis:

Sphingosine-1-phosphate (S1P) is important in maintaining normal P-gp function at the developing blood-brain barrier. FTY720 (S1P receptor agonist) has dose-dependent effects on P-gp function.

Abstract:

Objective: P-glycoprotein (P-gp) is an efflux transporter located on the luminal membrane of brain endothelial cells (BECs) of the brain microvasculature. P-gp is present in fetal BECs and is important in protecting the developing brain. Sphingosine-1-phosphate (S1P), a lipid signaling molecule, has been shown to modify P-gp function in the adult rat blood-brain barrier (BBB) though the effects have been inconsistent. S1P is formed by sphingosine kinases (SKs), and acts through 5 membrane receptors (S1P₁₋₅). FTY720 acts as an agonist of S1P receptors at low concentrations, while at high concentrations inhibits production of endogenous S1P ($K_i = 2\mu\text{M}$). We hypothesized that S1P receptors are expressed in the developing BBB and that FTY720 would have a dose-dependent effect on P-gp function.

Methods: BECs were isolated from male postnatal day 14 guinea pigs and cultured. At confluence, BECs were treated with FTY720 (0.1, 1, or 5 μM) or vehicle for 15, 30, 60 or 120 minutes. P-gp function was assessed using the calcein-AM fluorescence accumulation assay and cellular S1P was measured by mass spectrometry. S1P₁₋₃ receptors were measured in cultured

BECs by RT-PCR.

Results: S1P₁₋₃ receptors were expressed in BECs. Treatment of BECs with high dose FTY720 (5μM) for 15, 30, and 60 minutes resulted in a reduction in P-gp function (increased P-gp substrate accumulation; P<0.05). Conversely, low dose FTY720 (0.1μM) increased in P-gp function only at 30 minutes. There were no effects at 120 minutes. After 30 minutes, cells treated with high dose FTY720 (5μM) had decreased cellular S1P content.

Conclusion: FTY720 treatment rapidly affected P-gp function in BECs derived from the developing brain, in a highly dose-dependent manner. At low concentrations, known to activate S1P receptors, FTY720 increased P-gp function. However, at high concentrations, known to inhibit S1P production and seen here as a decreased cellular S1P, FTY720 decreased P-gp activity. These data are consistent with S1P having an important role in the regulation of P-gp in the developing BBB. S1P levels are altered in many pathologies, including hypoxia, ischemia, inflammation, and infection. Modification of S1P levels resulting in changes in P-gp activity will likely profoundly alter exposure of the developing brain to xenobiotics, drugs and other factors.

Primary Category

for Abstract: Maternal-Fetal Medicine, Developmental Physiology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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University of Toronto Trainee Graduate Student

Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: Antenatal Glucocorticoid Treatment Has Multigenerational Effects On Behavior Of Juvenile Offspring Via Paternal Transmission

Abstract Keywords: Synthetic glucocorticoid, behavior, animal, fetal programming, stress

Précis:

Prenatal exposure to synthetic glucocorticoid alters the behavior of second-generation female offspring. The effects are transmitted via fathers who were exposed to glucocorticoid *in utero*.

Abstract:

OBJECTIVE

Antenatal synthetic glucocorticoid (sGC) exposure can ‘program’ stress responsiveness and related behaviors in offspring. We have previously shown that multiple course antenatal sGC treatment leads to reduced hypothalamic-pituitary-adrenal (HPA) function and altered behavior in second-generation offspring (F₂; via maternal transmission). No study has examined whether the effects of antenatal sGC treatment can be passed to the second generation through paternal transmission. In the present study, we hypothesized that multiple course sGC therapy would significantly affect growth and behavior in juvenile offspring whose fathers were exposed to sGC *in utero*.

METHODS

Pregnant guinea pigs were subcutaneously treated with betamethasone (Beta; 1mg/kg; n=22) or saline (n=16) on gestational days 40/41, 50/51, 60/61 (term ~69 days). Adult first generation (F₁) males were mated with control females to produce F₂ offspring. Anthropometric measures were taken at birth and on postnatal day (PND) 20. F₂ offspring were tested in an open-field (30 min) to assess stress-induced locomotor activity on PND19 and 24. Attention was assessed by prepulse inhibition (PPI) testing on PND23. Radio-telemetry was used to assess locomotor activity in the animals’ home cage (non-stressed; 24-hr) on PND35.

RESULTS

sGC exposure had no effect on the growth of F₂ offspring. At PND19, Beta females displayed increased stress-induced locomotor activity in the open field (P2 male offspring).

CONCLUSION

This is the first study to demonstrate paternal transmission of the effects of antenatal sGC treatment. Female F₂ offspring appear to be more susceptible to the effects of sGC than male offspring. sGC-exposed females displayed different behavior under stress and non-stressed conditions, suggesting a fundamental alteration in regulation of stress signaling. We are currently investigating potential changes in basal and stress-activated HPA function in these juvenile F₂ offspring, as well as assessing behavior in adult animals. Given that approximately 10% of all children in the developed world have been prenatally exposed to sGC, it is critical that we understand the long-term implications of such therapy.

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Fetal Programming
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 66 J2

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Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Using estimated fetal weight at level II ultrasonography to predict
gestational diabetes mellitus and newborn macrosomia

Abstract Keywords: Gestational diabetes mellitus, ultrasound, estimated fetal weight, birthweight,
macrosomia, large for gestational age birthweight, case-control study

Précis:

While EFW at 18-22 weeks was not associated with GDM, it did predict newborn weight and LGA status.

Abstract:**Objectives:**

1. Does estimated fetal weight (EFW) at 18-22 week ultrasound predict gestational diabetes mellitus (GDM) at 24-28 weeks gestation?
2. Is EFW at 18-22 weeks associated with newborn weight and LGA birthweight $\geq 90^{\text{th}}$ percentile?

Methods:

We performed a case-control-control study at St. Michael's Hospital, Toronto. Cases comprised women with GDM on insulin (n = 65) or diet (n = 65). Controls were women with a negative GDM screen (n = 131). We obtained standardized sonographic EFW at 18-22 weeks gestation. Multivariable linear (LIN) and logistic (LOG) regression analyses were used.

Results: A 1-SD (70-g) higher EFW was not associated with GDM (ORa 1.00, 95% CI 0.61 to 1.66) (LOG: adjusted for gestational age at time of EFW, infant sex, maternal age, ethnicity, parity and BMI). However, upon combining cases and controls, a 1-SD (70-g) higher EFW was associated with a 231 g (95% CI 128 to 334) higher birthweight (LIN: adjusted for gestational age at time of EFW, gestational age at delivery, infant sex, maternal age, ethnicity, parity and BMI). Similarly, a 1-SD (70-g) higher EFW was associated with LGA (ORa 4.02, 95% CI 1.76 to 9.19) (LOG: adjusted for gestational age at time of EFW, infant sex, maternal age, ethnicity, parity and BMI).

Conclusion: While EFW at 18-22 weeks was not associated with GDM, it did predict newborn weight and LGA status.

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary ultrasound
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 69 J3

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University of Clinical Fellow
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Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Maternal and Neonatal Outcomes in Triplet Gestation – A North American Experience

Abstract Keywords: Triplet gestation, multiple pregnancy, maternal and neonatal outcomes

Précis:

The gestational age at delivery of our triplet gestation cohort remains at 32 weeks and is associated with significant adverse neonatal outcomes.

Abstract:

OBJECTIVE: Essentially 100% triplet gestation are born prior to term and thus experience an associated increase in neonatal short- and long-term sequelae for all three neonates. In Ontario, as in many other places in North America, the majority of triplet gestation are the result of assisted reproductive techniques (ART). Despite the known potential for fetal, neonatal and maternal complications, multiple-embryo transfer is still widely practiced and requested by the infertile couple. The objective of this study was to determine the average gestational age at delivery and to assess the obstetrical, maternal and neonatal outcomes associated with triplet gestation at a large North American tertiary care center.

STUDY DESIGN: A retrospective chart review for all women, with triplet gestation, who received antenatal care and delivered after 20 weeks of gestation at Mount Sinai Hospital (Toronto, Canada) was conducted. The study period was from January 2000 to June 2013. A total of 230 pregnant women and 690 fetuses were identified.

RESULTS: The mean gestational age at delivery was 32.0 ± 3.3 weeks. 79% of patients received antenatal corticosteroids. Most patients delivered by unplanned or urgent cesarean section (n=160; 69.6%), compared to elective cesarean section (n=50; 21.7%). Only a minor proportion delivered vaginally (n=20; 8.7%), and most of them were deliveries at or under 25 weeks (n=13). The most common complications were preterm premature rupture of the membranes (29.1%), preterm labor (26.1%), preeclampsia or HELLP (18.7%) and gestational diabetes (10%). Mean birth weight in infants delivered after 24 weeks of gestation was 1654.5 g +/- 549.6 g and the incidence of IUGR (birthweight

CONCLUSION: The majority of adverse fetal outcomes associated with triplet gestation are secondary to the risk of prematurity. Thus, measures should be taken to limit the number of embryos transferred in effort to reduce the current prevalence of triplet and higher order multiple gestation.

Primary Category Maternal-Fetal Medicine
for Abstract:

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 70 J4

Author(s): Fabiha Rahman (**Presenter**), Department of Physiology, University of Toronto
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University of Toronto Trainee Status for First (ie Presenting) Author: Undergraduate Student

Presentation Preference: Poster

Abstract Title: Antenatal Glucocorticoid Treatment and Programming of the Juvenile Pituitary

Abstract Keywords: Prenatal sGC, HPA axis, anterior-pituitary, juvenile-offspring

Précis:

Prenatal glucocorticoid treatment resulted in altered expression of stress-associated genes in the anterior pituitaries of juvenile guinea pig offspring.

Abstract:

Objective: Approximately 10% of pregnant women are at risk of preterm delivery and receive treatment with synthetic glucocorticoids (sGCs) to reduce the risk of respiratory distress syndrome in the newborn. This treatment is effective at reducing neonatal morbidity and mortality, however, little is known about the consequences of this treatment on hypothalamic-pituitary-adrenal (HPA) function in the juvenile period. We have previously shown that HPA reactivity to stress is elevated in juvenile offspring exposed to sGC in late gestation. In the present study, we investigated the hypothesis that prenatal exposure to sGC results in altered molecular regulation of HPA-regulatory genes in the juvenile anterior pituitary.

Methods: Pregnant guinea pigs were subcutaneously injected with sGC, betamethasone (1 mg/kg), or saline on gestational days 40,41,50,51,60 and 61. Subsequently, we investigated the expression of key HPA regulatory genes in the pituitaries of juvenile offspring using real-time quantitative PCR and Western Blot.

Results: Prenatal sGC treatment resulted in a significant increase in proopiomelanocortin (POMC) protein expression in juvenile female pituitaries ($p=0.039$). There were also strong trends for reduced arginine vasopressin receptor 1B (Avpr1b) and corticotrophin releasing hormone receptor 1 (Crhr1) protein and mRNA levels in the anterior pituitaries of sGC-exposed females. In juvenile male offspring, there was no effect of sGC treatment on Pomc mRNA or protein levels. However, there were strong trends for increased Avpr1b and Crhr1 mRNA and protein levels in the sGC-exposed males. There was no effect of sGC treatment on Gr mRNA and protein levels in the

anterior pituitaries of female or male juvenile offspring.

Conclusion: The increased POMC protein expression in anterior pituitaries of female juvenile sGC-exposed offspring suggests an increased anterior pituitary drive to the adrenal, and this is consistent with the increased HPA responsiveness to stress in this group. While there were no overall significant effects of sGC treatment on the expression of *Avpr1b* and *Crhr1* mRNA and protein (indicators of pituitary sensitivity to hypothalamic signals) in the juvenile animals, significant effects may emerge as the animals age. sGCs are widely used for treating women at risk for preterm labour, and these studies have expanded our understanding of the mechanisms underlying prenatal sGC exposure on the programming of neuroendocrine function in juvenile animals. This may lead to the earlier diagnosis of diseases associated with increased stress susceptibility.

Primary Category for Abstract: Maternal-Fetal Medicine

Secondary Category for Abstract: Synthetic Glucocorticoids

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 89 J5

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University of Toronto Trainee: Resident

Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: Treating Early Onset Preeclampsia in Triplets with Severe IUGR by Fetal Reduction: A Case Report

Abstract Keywords: Preeclampsia, IUGR, Multiple Gestation, HELLP Syndrome, Fetal Reduction
Précis:

In certain circumstances, selective fetal reduction may be an option for treating severe preeclampsia in multiple gestations to help improve outcomes in the surviving fetus.

Abstract:

OBJECTIVE:

Multiple gestations are at higher risk of developing preeclampsia and HELLP syndrome in association with a placental disorder that may directly affect one but not all fetuses, thereby placing all fetuses at risk. We present a unique method of managing preeclampsia and HELLP syndrome in this pregnancy to elongate the time to delivery and achieve a viable fetus.

METHODS:

Case Report: A patient with a trichorionic triamniotic triplet pregnancy presented to hospital at 23 weeks and 5 days gestational age with severe early-onset preeclampsia and HELLP syndrome. Ultrasound examination showed non-viable extreme intrauterine growth restriction in 2 of the 3 fetuses. In addition to management of severe preeclampsia, the 2 non-viable triplets were treated with selective fetocide in an effort to reverse the effects of preeclampsia.

RESULTS:

The patient's blood pressure normalized and HELLP syndrome reversed slowly in the days following the reduction of the two fetuses, allowing for continuation of the pregnancy. Fetal imaging showed appropriate growth, normal amniotic fluid volume and a normal biophysical profile in the remaining fetus. At 26 weeks and 2 days gestational age, the patient went into early labour and she was taken for an urgent cesarean section. An appropriate for gestational age infant was delivered and was taken to the neonatal intensive care unit.

CONCLUSION:

Selective fetal reduction, resulting in involution of the pathologic placenta(s) may be an option for treating preeclampsia in multiple gestations in an effort to improve outcomes in the surviving fetus. In certain circumstances, this novel therapy may offer another option to treat severe preeclampsia and attempt to prolong pregnancy versus immediate delivery.

Primary Category Maternal-Fetal Medicine
for Abstract:

Secondary Preeclampsia
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 75

J6

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**University of
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Status for First (ie
Presenting) Author:
Presentation**

Graduate student

Preference:

Poster

Abstract Title:

TGF β –mediated Polarization of Decidual Neutrophils

Abstract Keywords:

neutrophils, leukocytes, TGF β , angiogenesis, vascular remodeling

Précis:

Treatment of peripheral neutrophils with decidual conditioned media induces a phenotype with altered expression of numerous angiogenesis-regulating factors which is partially replicated by TGF β 1 treatment.

Abstract:

OBJECTIVE: Trophoblast-leukocyte spiral artery mediated remodeling is an essential step of early pregnancy which enables perfusion of the intervillous space and maintains the integrity of fetomaternal exchange. Absent in first trimester decidua, the contribution of neutrophils to uterine vascular transformation has largely been ignored. However, we have shown that second trimester decidua basalis harbours a significant neutrophil population which is also observed in murine gestation. In mice, TGF β has been shown to polarize normal proinflammatory neutrophils into an alternate anti-inflammatory tumorigenic angiogenic subtype (N2). As trophoblast cells are known to express TGF β , we hypothesize that TGF β similarly stimulates conversion of peripheral neutrophils in the decidua into a pro-angiogenic subtype which may aid in end-stage vascular remodeling in the second trimester.

METHODS: RNA was isolated from peripheral blood neutrophils obtained from women in 2nd trimester pregnancy following 5 hour incubation with 2nd trimester decidua-conditioned media (DCM), TGF β 1 (10ng/ml), or untreated controls for comparison of mRNA transcript levels of pro- and anti-angiogenic factors in qPCR arrays. Results were validated by qRT-PCR analysis of selected genes. TGF β presence was confirmed with dot blot arrays of pooled 2nd trimester DCM. Co-cultures of neutrophils and uterine microvascular endothelial cells were performed to assess

pro-angiogenic potential of neutrophils following DCM treatment.

RESULTS: TGFβ1 and DCM-treatments induced several significant (> 2-fold) changes in mRNA expression of angiogenesis-regulating factors. However, TGFβ1 was only able to partially replicate the effects of DCM treatment, which strongly increased expression of CXCL2, IL8, CXCL3, IL6, and VEGFA, among others. Endothelial cells demonstrated greater tube length and branch point formation following co-culture with DCM-treated neutrophils as opposed to untreated peripheral blood neutrophils.

CONCLUSION: TGFβ1 treatment of peripheral neutrophils stimulates a switch in gene expression towards an angiogenic phenotype similar to DCM and N2 neutrophils. Further experiments are in progress to define a specific role for the TGFβ family in induction of angiogenic neutrophil differentiation within the decidua.

Primary Category

for Abstract: Maternal-Fetal Medicine, Reproductive Immunology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 7 K1

Author(s): Genevieve Bouchard-Fortier (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Toronto Trainee Clinical Fellow

Status for First (ie Presenting) Author:

Presentation Oral

Preference:

Abstract Title: Is Venous Thromboprophylaxis Necessary in Patients Undergoing Minimally Invasive Surgery for a Gynecologic Malignancy?

Abstract Keywords: Minimally invasive surgery, gynecologic malignancies, venous thromboembolism, thromboprophylaxis

Précis:

The rate of venous thromboembolism in patients undergoing laparoscopic surgery for management of a gynecologic malignancy was rare despite lack of thromboprophylaxis.

Abstract:

OBJECTIVES: Current recommendations for the use of venous thromboprophylaxis in patients undergoing minimally invasive surgery (MIS) for a gynecologic malignancy are derived from patients undergoing open surgery. Our objective was to determine the 30-day prevalence of symptomatic venous thromboembolism (VTE) after laparoscopic gynecologic oncology procedures in patients who received no thromboprophylaxis.

METHODS: Between January 2006 and September 2013, women who underwent MIS for endometrial, cervical or ovarian cancer at a single institution were included. Data on patient demographics, diagnosis, comorbidities, use of thromboprophylaxis, perioperative characteristics, and diagnosis of VTE were collected retrospectively.

RESULTS: Of the 419 patients who underwent MIS for a gynecologic cancer, 352 (84%) received no VTE prophylaxis. At least a total laparoscopic hysterectomy (simple or radical) or pelvic lymph node dissection was performed in 95% of these patients. The median length of surgery was 137 minutes and 95% of patients were discharged home within 1 day of surgery. The rate of VTE in the 352 untreated patients was 0.57% (1 pulmonary embolism and 1 deep vein thrombosis). There were no VTE diagnosed within 30 days of surgery in the 67 patients who received anticoagulant

thromboprophylaxis.

CONCLUSION: The rate of VTE is low in patients undergoing minimally invasive surgery for a gynecologic malignancy despite no VTE prophylaxis. The benefits of routine use of VTE prophylaxis in this population are questionable.

Primary Category for Abstract: Gynaecologic Oncology

Secondary Category for Abstract: Minimally invasive surgery

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 8 K3

Author(s): Clara Cheong (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Toronto Trainee Status for First (ie Presenting) Author: Medical Student

Presentation Preference: Poster

Abstract Title: Does the Initial Management of High-Grade Serous Ovarian Cancer Predict Sites of Recurrence?

Abstract Keywords: Ovarian cancer, neoadjuvant chemotherapy, debulking surgery, recurrence
Précis:

After treatment of high-grade serous ovarian cancer, comparing the effects of primary debulking surgery versus neoadjuvant chemotherapy/interval debulking surgery on sites and extent of recurrence.

Abstract:

Introduction: Ovarian cancer is the 6th most common cancer in women and the 7th most common cause of cancer death worldwide. The clinical presentation of ovarian cancer is typically related to symptoms of advanced stage disease, as the majority of women have advanced disease at

presentation. Epithelial ovarian cancer (EOC) is the most common form of ovarian cancer and high-grade serous (HGSOC) is the commonest and most aggressive subtype. The treatment for advanced ovarian cancer consists of either primary debulking and staging surgery (PDS) followed by chemotherapy or neoadjuvant chemotherapy followed by interval debulking surgery (NACT-IDS). Overall survival has remained largely unchanged over the last thirty years due to high recurrence rates and failure of second and third-line therapies.

Objectives: To date, no study has examined whether the choice of treatment (PDS versus NACT-IDS) determines the pattern of recurrence. This study explored the areas of recurrence after treatment and compared the effects of these two treatments modalities with the goal of determining the ideal method of treatment for these patients.

Methods: This study reviewed all HGSOC patients with stage IIIC and IV disease treated at Princess Margaret Cancer Centre between 2008-2013. To be included in the study, patients had to receive a pre-treatment CT scan and a CT scan at the time of recurrence at UHN. The patients were divided into two groups according to their treatment type (PDS or NACT-IDS). For all patients, we will examine CT reports at the time of diagnosis and recurrence. The sites and type of recurrence (local or diffuse) will be compared between patients who received PDS versus NACT-IDS.

Results: 218 patients with stage IIIC/IV disease were identified and 40 patients fulfilled the criteria for this study. Of these patients, 18 patients underwent PDS and 20 patients underwent NACT-IDS. 23 Patients had microscopic cytoreduction, 8 had optimal cytoreduction, and 7 suboptimal cytoreduction. The Radiology team is reviewing the CT imaging results for all cases. Studying the areas and extent of recurrence following these treatment methods will help determine the role of cytoreductive surgery and the ideal mode of treatment for patients with advanced ovarian cancer.

Funding: Mount Sinai Department of Obstetrics & Gynecology Research Fund

Primary Category Gynaecologic Oncology
for Abstract:

Secondary Ovarian Cancer
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 14 K2

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University of Graduate Student
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Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: The Impact of BRCA1 Expression on Glucocorticoid Receptor Signaling in Ovarian Cancer Cells

Abstract Keywords: BRCA1, Glucocorticoid Receptor (GR), high-grade serous ovarian cancer (HGSOC)

Précis:

BRCA1 could alter anti-inflammatory glucocorticoid receptor signaling in fallopian tube epithelial cells, possibly contributing to predisposition to high-grade serous ovarian cancer in *BRCA1* mutation carriers.

Abstract:

Background: Mutations in *BRCA1* and a family history of ovarian cancer are the main predictors of lifetime ovarian cancer risk. It is important, therefore, to understand the underlying biology behind ovarian cancer to develop novel, or refined, treatment options. Recent evidence indicates that the fallopian tube – not the ovary – may be the tissue of origin of high-grade serous ovarian cancer, the most prevalent and deadly subtype of ovarian carcinoma. Further, it is thought that the pro-inflammatory environment generated during ovulation, and possibly persisting during the post-ovulatory luteal phase, can generate DNA damage if timely resolution of inflammatory signaling is not achieved. Our lab has previously shown that BRCA1 enhances glucocorticoid receptor (GR) signaling in a transfected ovarian cancer cell line, suggesting that loss of BRCA1 protein may diminish anti-inflammatory signaling.

Objective: To determine if BRCA1 mutation status alters the activity of GR signaling in fallopian tube and ovarian cancer cells.

Methods: GR and BRCA1 expression in ovarian cancer cell lines was determined by Western blot analysis. GR activity in cell lines was determined by luciferase reporter gene studies. Primary fallopian tube epithelial (FTE) cell cultures will be derived from surgical specimens of patients with a known BRCA1 mutation or with no family history of breast or ovarian cancer.

Results: All ovarian cancer cell lines tested express GR as determined by Western blot analysis. Comparison of a matched BRCA1 null and BRCA1 expressing ovarian cancer cell line indicates a lower level of GR in BRCA1 null cells. GR responsive reporter gene studies indicate low levels of endogenous GR activity, with high levels observed following exogenous GR expression, indicating these cells have the capacity to respond to a fully functional GR. A greater level of endogenous and exogenous GR activity was observed in BRCA1 expressing cells relative to conspecific BRCA1 null cells. We are presently extending these studies to determine if BRCA1 affects GR expression and to determine if *BRCA1* status affects glucocorticoid-induced anti-inflammatory gene expression in patient-derived primary FTE cell cultures.

Conclusion: BRCA1 expression appears to influence transcriptional activity of GR-responsive promoters and may impact the expression of GR. Continuing work will examine the mechanism involved and determine if *BRCA1* mutation status impacts the anti-inflammatory GR signaling.

Primary Category for Abstract: Gynaecologic Oncology

Secondary Category for Abstract: Ovarian Cancer

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 18 K4

Author(s): Soyeon Park (**Presenter**), Other
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University of Toronto Trainee Status for First (ie Presenting) Author: Graduate Student

Presentation Preference: Poster

Abstract Title: SPARC inhibits VEGF-induced activation of ERK and p38 MAPK and blocks endothelial cell migration and proliferation.

Abstract Keywords: Angiogenesis, SPARC, VEGF, VEGF Receptor 2, p38 MAPK, ERK, Migration, Endothelial cells

Précis:

SPARC downregulates VEGF-induced p38 MAPK and ERK phosphorylation and inhibits VEGF-induced endothelial cell migration, consistent with an inhibitory effect on angiogenesis.

Abstract:

Introduction: Angiogenesis, which is primarily mediated by Vascular Endothelial Growth Factor-A (VEGF) and its receptors, is dysregulated during tumorigenesis. Activation and phosphorylation of VEGF-receptor 2 (VEGF-R2) has been shown to induce the activation and phosphorylation of ERK, Akt, and p38 MAPK, affecting endothelial cell proliferation and migration. Secreted Protein, Acidic, and Rich in Cysteine (SPARC) is a small extracellular glycoprotein shown to negatively regulate angiogenesis, endothelial cell proliferation and cell spreading. A proposed mechanism is that SPARC binds to VEGF, preventing it from interacting with VEGF-R1 but not VEGF-R2. Work by our group has established that SPARC binds to VEGF with a slow on-off kinetics. However, since VEGF-R2 rather than VEGF-R1 is the primary mediator of VEGF effects on endothelial cells, the impact of SPARC on angiogenesis is not fully characterized.

Objectives: To investigate the impact of SPARC on VEGF-induced VEGF-R2 phosphorylation and activation of downstream mediators.

Methods: Human Umbilical Vein Endothelial Cells (HUVECs), which express little VEGFR-1, were treated with VEGF in the presence or absence of SPARC. Western blot analysis and flow cytometry were performed to examine the phosphorylation status of VEGF-R2, ERK, Akt, and p38 MAPK. Cells were subjected to transwell migration assays to examine the effects of SPARC on VEGF-induced migration.

Results: SPARC decreased the phosphorylation of VEGF-induced VEGF-R2, ERK, and p38 MAPK. SPARC had no effect on the phosphorylation of these proteins in the absence of VEGF. Consistent with these findings, SPARC decreased VEGF-induced migration of HUVECs, but had no effect in the absence of VEGF. Studies examining the effects on cell proliferation are ongoing.

Conclusions: These findings support a model whereby SPARC binds VEGF to prevent its activation of VEGF-R2 and subsequent activation of downstream targets critical for endothelial cell activities important for angiogenesis. Thus, SPARC may be a potential therapeutic candidate as an inhibitor for angiogenesis. Studies examining the impact of SPARC mimetic peptides are underway.

Funded by: NSERC and CIHR Collaborative Health Research Program.

Primary Category Gynaecologic Oncology
for Abstract:

Secondary Angiogenesis
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 94 K6

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**University of
Toronto Trainee
Status for First (ie
Presenting) Author:**

Resident

**Presentation
Preference:**

Poster

Abstract Title: Performance Study of the Risk of Malignancy Index (RMI) and Risk of Ovarian Malignancy Algorithm (ROMA) by Histology and Stage of Disease in Women Dia

Abstract Keywords: Ovarian mass, histology, Risk of Malignancy Index (RMI), Risk of Ovarian Malignancy Algorithm (ROMA)

Précis:

This cohort study of 131 patients shows poor performance of the RMI and ROMA for predicting ovarian malignancy, particularly in stage I disease.

Abstract:

Objective: Early detection of ovarian cancer is challenging. Tools such as the Risk of Malignancy Index (RMI) and Risk of Ovarian Malignancy Algorithm (ROMA) rely on tumor markers (e.g. Ca-125/HE4) and abnormalities on ultrasound. These markers may be inaccurate in early stage disease and non-serous histologies. This study evaluates the distribution of histologic subtypes and stage of disease in women with confirmed ovarian cancer and determines the performance of the RMI/ROMA in stage I disease.

Methods: All gynecological patients referred to Princess Margaret Hospital with a pelvic mass between February 2011 and January 2013 were approached for inclusion in this study.

Pre-operative tumor markers and ultrasound findings were reviewed for patients with confirmed ovarian cancer. The sensitivity and false negative rates of the RMI/ROMA scoring were determined by stage of disease and tumor histology.

Results: Of 131 patients, 64 (49%) had advanced disease with a median Ca-125 of 268 and HE4 of 349, of whom 44 (69%) were found to have high-grade serous (HGS) histology. Forty-five (34%) patients presented with stage I disease with only 5 (11%) HGS histology. RMI and ROMA had significantly higher sensitivity for HGS than endometrioid or clear cell histology. RMI and ROMA scoring for women with stage I disease (N = 35) revealed sensitivities of 68% and 54% and a false negative rate of 32% and 46%, respectively versus sensitivities of 94% and 93%, respectively for stage III/IV disease.

Conclusion: Stage I disease is comprised of primarily non-serous histologies where RMI/ROMA scoring systems perform poorly.

**Primary Category
for Abstract:**

Gynaecologic Oncology

**Secondary
Category for
Abstract:**

Ovarian cancer

**Supervisor
Approval:**

Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 30

K5

Author(s):

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**University of
Toronto Trainee
Status for First (ie
Presenting) Author:
Presentation**

Post-Doctoral Fellow

Preference:

No Preference

Abstract Title:

Surgical Factors and Timing of Surgery Do Not Impact Survival
in Patients with High-Grade Serous Ovarian Cancer Treated with
Neoadjuvant Chemotherapy

Abstract Keywords:

serous ovarian cancer, neoadjuvant chemotherapy, surgery,
survival

Précis:

The timing of interval surgery and surgical debulking status have no impact on survival in patients with high-grade serous ovarian cancer treated with neoadjuvant chemotherapy.

Abstract:

Objective: Advanced stage high-grade serous ovarian carcinoma (HGSC) is treated with a combination of surgery and chemotherapy. In this study, we aimed to investigate the survival of patients treated with neoadjuvant chemotherapy at different time-points compared to primary cytoreductive surgery.

Methods: Patients with stage III and IV HGSC diagnosed between 2003-2011 were included in this retrospective cohort study; 398 patients met inclusion criteria. Clinical data were obtained from patient records. Patients were divided into two groups treated with either neoadjuvant chemotherapy and interval cytoreductive surgery (NAC, n=192) or primary cytoreductive surgery and adjuvant chemotherapy (PCS, n=206). The NAC group was stratified by the timing of interval surgery in relation to the number of neoadjuvant chemotherapy cycles (3, 4, or ≥ 5). Log-Rank statistical tests were performed and Kaplan-Meier survival curves were generated.

Results: NAC patients had significantly worse overall survival compared to PCS patients (31.6 versus 61.3 months; $p < 0.001$). Survival of the NAC group was independent of the timing of interval surgery in relation to chemotherapy cycles. In addition, optimal surgical cytoreduction

had no impact on overall survival in the NAC group ($p < 0.001$). Conversely, optimal cytoreduction was an independent predictor of improved survival in the PCS group ($p < 0.001$). Importantly, platinum sensitivity was an independent predictor of improved survival in both study groups ($p < 0.001$).

Conclusion: The timing of interval surgery following neoadjuvant chemotherapy had no impact on survival in patients with advanced HGSC. Similarly, optimal cytoreduction does not provide a survival advantage in the NAC group as it does in the PCS group. Notably, patients treated with NAC had significantly worse overall survival than PCS patients.

Primary Category

for Abstract: Gynaecologic Oncology

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Status for First (ie Presenting) Author:
Presentation Preference: Poster
Abstract Title: Neonatal Outcomes of Preterm twins According to Presentation and Mode of delivery
Abstract Keywords: Preterm twins, neonatal outcome, morbidity
Précis:

A comparison of the outcomes according to mode of delivery and presentation of preterm twins below 33 weeks admitted to tertiary centers in Canada.

Abstract:

Objective: To compare outcomes according to mode of delivery and presentation of very preterm twins (

Methods: A retrospective cohort of preterm twins (GA 24⁺⁰ to 32⁺⁶ weeks) born between 2005 and 2012 was identified from the Canadian Neonatal Network participating Neonatal Intensive Care Units. Pregnancies were classified into groups according to mode of the delivery: both vaginal (Vag/Vag), combined vaginal and caesarean section (Vag/CS) and both by caesarean (CS/CS). Additionally, pregnancies were classified into groups according to mode of presentation: both vertex (Vtx/Vtx), vertex/breech (Vtx/Br), breech/Vertex (Br/Vtx), and both breech (Br/Br). Primary outcome was a composite of severe neonatal morbidity and/or mortality. Association of delivery method and presentation group with the composite outcome was tested using multivariable logistic regression analyses.

Results: Of 6636 twins, 1934 delivered vaginally, 418 had combined vaginal and caesarean delivery and 4284 twins were both delivered by caesarean. The risk of severe neurologic injury

(Intraventricular haemorrhage grade III/IV or periventricular leukomalacia) was decreased in the both twins caesarean group [0.77(0.61, 0.98)] compared to the both twins vaginal group. Increased mortality was observed in the Breech/Vertex group (1.91 [1.12, 3.24]).

Conclusions: In this cohort of very preterm twins, infants born via cesarean section experienced less severe neurological injury (Intraventricular haemorrhage grade III/IV or periventricular leukomalacia) as compared to those delivered vaginally.

Primary Category Obstetrics

for Abstract:

Secondary Prematurity

Category for

Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 21 L3

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Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: HIV knowledge among pregnant women at an inner city hospital in Toronto, Canada

Abstract Keywords: HIV, Knowledge, Pregnant women

Précis:

The purpose of this study is to assess the HIV knowledge among pregnant women at an inner city hospital in Toronto, Canada

Abstract:

Background:

The purpose of this study is to assess the HIV knowledge among pregnant women at an inner city hospital in Toronto, Canada. Since the rate of mother-to-child transmission of HIV can be reduced with timely antiretroviral prophylaxis, it becomes important to assess knowledge gaps so that targeted educational materials can be created for this population. This is the first study to look at

the knowledge of HIV among Canadian women.

Methods:

A questionnaire was distributed to pregnant women attending a prenatal clinic at St. Michael's Hospital in Toronto from July 2012 to January 2013. The questionnaire asked about patients' demographic information, their pregnancy and health information, and contained 19 multiple choice HIV knowledge questions.

Results: A total of 100 surveys were completed for analysis. Results are pending analysis. Preliminary results indicate that there is some knowledge deficit present.

Conclusions: Pending analysis and results.

Primary Category for Abstract: Obstetrics

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 24 L5

Author(s): Anjali Kulkarni (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Toronto Trainee Medical Student

Status for First (ie Presenting) Author:

Presentation Preference: Poster

Abstract Title: Web-based education and attitude to Caesarean Delivery in Nulliparous Women

Abstract Keywords: Caesarean Delivery, web-based education, internet, nulliparous

Précis:

A web-based educational tool significantly increased knowledge of the risks and benefits of vaginal and Caesarean deliveries. The intervention did not significantly change delivery preference.

Abstract:

OBJECTIVE: To measure the impact of a web-based educational tool upon baseline knowledge of the risks and benefits of Caesarean Delivery in healthy nulliparous women.

METHODS: A password-protected web-based educational tool was constructed to provide evidence-based information on the potential benefits and risks of Caesarean delivery for healthy nulliparous women in the 2nd trimester following completion of their 20-22 week placental health ultrasound. Inclusion criteria were uncomplicated singleton pregnancy and receiving antenatal care at Mount Sinai Hospital. Eligible women logged into the site to undertake a pre-test survey. Upon completion they received access to the site and were followed to re-survey their attitudes. The surveys collected baseline demographic and assessed the knowledge, sources of information and influence upon their views on the perceived safety and risk of vaginal and Caesarean deliveries. The surveys also probed for their understanding of the impact of Caesarean delivery on future pregnancies.

RESULTS: 73 participants completed both surveys. The cohort had a high baseline preference (84%) for vaginal delivery. The mean knowledge score for vaginal and Caesarean deliveries increased significantly between the surveys, from 47%-76% (p

CONCLUSIONS: We demonstrated that a web-based educational tool significantly increased knowledge of the risks and benefits of vaginal and Caesarean deliveries. Though a majority desired a vaginal delivery, the educational intervention did not significantly change delivery preferences.

Primary Category Obstetrics
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 87 L4

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University of Medical Student

Toronto Trainee

Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Patient Profile and Reproductive Health Concerns of Young Women
Attending a Specialized Gynecology Clinic

Abstract Keywords: Adolescent Gynecology, Young Adult, Transition, Health Behaviours,
Management

Précis:

An overview of reproductive health concerns and management of young women referred for population-specific gynecologic care.

Abstract:

Objective: According to the literature, a health care provider's ability to provide integrated and adolescent-friendly care predicts their ability to attract and retain adolescent patients. Young women are more likely to report unmet health care needs and research in the area of transition to adult gynecological care is lacking. The primary objective of this study was to identify patient characteristics, presenting complaints, treatment, procedures, and services provided to the emerging adult seeking population-specific gynecological care.

Methods: This is an ongoing retrospective chart review of women referred for care at the Young Women's Gynecology Clinic (YWGC) at Women's College Hospital between September 2012 and November 2013. The clinic is intended for women aged 17 to 25 and is in its second year of operation. The main outcome measures were presenting and identified complaints, management, and referral source.

Results: Sixty two charts have been reviewed. Mean patient age was 20.5 ± 2.8 years. Seventy-five (74.6) percent of patients were students; 18.6% were employed. Seventy-four (73.8) percent of patients were sexually active. Smoking (26.9%), alcohol use (60.8%), marijuana use (30.8%), and other street drug use (5.1%) were elicited on history. Mean time from referral to appointment was 130.0 ± 51.9 days. The most common referral sources were family physicians (61.3%), community pediatricians (12.9%) and the Pediatric Adolescent Gynecology Clinic at the Hospital for Sick Children (12.9%). In 21.0% of patients, referral to the YWGC was for a transition care issue. The most common reasons for referral were secondary amenorrhea (14.5%), dysmenorrhea (11.3%), infrequent menstrual bleeding (11.3%), and heavy menstrual bleeding (9.7%). 40.3% of patients were identified as having one or more additional concerns. The most common diagnoses in all patients were AUB-ovulatory / PCOS (19.4%), hypothalamic amenorrhea (9.7%), contraceptive needs (9.7%), and endometriosis (6.5%). Management of these patients included combined oral contraceptives (53.2%), education (38.7%), levonorgestrel intrauterine system (12.9%), reassurance (8.1%), and surgery (1.6%).

Conclusion: Clinicians should be aware of health risk behaviours and common presenting concerns of young women referred for gynecologic care, and that many patients present with concerns in addition to those for which they are referred. The most common concerns were absent or infrequent menses. Education and reassurance are key management components and suggest the importance of educational tools and clinicians skilled in counselling this population.

Primary Category Paediatric and Adolescent Gynaecology
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 45

L1

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**University of
Toronto Trainee
Status for First (ie
Presenting) Author:
Presentation**

Graduate Student

Preference:

Oral

Abstract Title:

Oral Administration of *Lactobacillus rhamnosus* GR-1 alters the vaginal microbiome profile but not the cecal microbiome in pregnant CD-1 mice

Abstract Keywords:

Probiotics, *Lactobacillus*, Pregnant CD-1 mice, vaginal and cecal microbiome

Précis:

Oral probiotics *Lactobacillus rhamnosus* GR-1 alter the vaginal but not the cecal microbiota in pregnant CD-1 mice.

Abstract:

Objective: Probiotic *L. rhamnosus* GR-1 (GR-1) promotes human urinary and reproductive tract health. Pregnant mice are widely used as a model for human health and diseases. Previous studies of the mouse vaginal microbiome have used only culture-based methods. We aimed to (1) examine pregnant mouse vaginal and cecal microbiota using DNA sequencing and (2) evaluate the effect of GR-1 on these microbiota.

Methods: Live GR-1 bacteria (10^9 cfu, n=8) or saline (n=6) was given to pregnant CD-1 mice daily from gestational day (GD) 9 to 15 by oral gavage. On GD 16, vaginal and cecal tissues were collected, DNA was extracted with MoBio PowerSoil DNA Extraction kit and bacterial DNA was amplified by PCR. The V6 region of 16S rRNA gene was sequenced (Ion Torrent). Data were centered log ratio transformed and unpaired Student t test was used for comparisons between saline and GR-1 treated mice. q-values <0.1 (false discovery rate adjusted) were

considered significant.

Results: We detected 29 and 24 bacteria orders in the vagina and cecum of saline treated mice respectively. The most abundant bacteria orders were *Pasteurellales* (20% of total bacteria), *Bacillales* (15%) and *Lactobacillales* (15%) in the vagina, and *Bacteroidales* (43%), *Clostridiales* (27%) and *Deinococcales* (3%) in the cecum. GR-1 significantly increased the relative abundance of vaginal bacterial order *Bacteroidales*, *Clostridiales*, *Defferibacteriales*, *Erysipelotrichales* by 10-19 fold, but decreased the relative abundance of *Bacillales* by 3 fold. At the species level, GR-1 significantly increased ten vaginal bacterial species, with the most prominent upregulation observed for *B.intestinihominis* (30-fold). GR-1 did not change the vaginal abundance of bacteria at the genus and family levels. In the cecum, GR-1 did not change the microbiota composition at any bacterial level.

Conclusion: Oral probiotics alter the vaginal but not the cecal microbiota in pregnant CD-1 mice, suggesting that the potential mechanism of probiotics is indirect, and may involve signaling molecules transferred from the gastro-intestinal tract to the circulation, which then influence the vaginal microbiome and reproductive health.

Primary Category

for Abstract: Obstetrics

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Status for First (ie Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Static Stretch Influences The Expression of Extracellular Matrix Proteins In Vaginal Fibroblasts Derived From Women With Severe Pelvic Organ Prolapse

Abstract Keywords: vagina, pelvic organ prolapse, extracellular matrix, collagens, integrins, mechanical stretch

Précis:

We suggest that risk factors inducing stretch of the pelvic floor alter extracellular matrix composition of vaginal tissue resulting in the development of POP

Abstract:

Objective: We reported earlier that primary human vaginal fibroblasts (HVF) derived from patients with advanced Pelvic Organ Prolapse (POP) display differential proliferative characteristics, attachment to extracellular matrix (ECM) and react differently to mechanical loading by changing the expression of proteins involved in elastin and collagen metabolism vs HVFs derived from asymptomatic control women. Cell adhesion molecules (CAMs), including transmembrane integrin molecules that transmit mechanical signals, form the structural link between ECM matrix proteins and the cytoskeleton. Abnormalities in cell-matrix and cell-cell interactions may predispose women to POP. We hypothesized that POP-HVFs 1) will have an altered expression of ECM, integrin receptors, and CAMs, when compared to control-HVFs and 2) will react differentially to continuous static mechanical stretch.

Methods: Premenopausal women undergoing total hysterectomy for benign conditions were recruited as controls, while women with advanced POP were recruited as patients. HVFs were isolated by enzymatic digestion of vaginal biopsies, seeded on 6-well collagen I (COLI)-coated bioflex® plates, and subjected to static mechanical loading for 24 hours. Total RNA was extracted and converted to cDNA; samples from POP and controls were pooled and the expression of 84 genes was analyzed. To confirm transcript level changes, qPCR analysis was performed on individual human vaginal cDNA samples using specific primers.

Results: (1) Up-regulation of contactin gene (CNTN1), as well as alpha and beta family integrins, that are components of collagen receptors (A1B1, A2B1), the ligand for VCAM1 (A4B1), was detected in non-stretched POP-HVFs when compared to control-HVFs (p

Conclusion: We speculate that (1) the change in ECM composition, accompanied by a misbalanced cell-ECM interaction, is a preexisting condition in patients genetically predisposed to prolapse, and that (2) increased mechanical loading of the pelvic floor will further alter the quality of pelvic floor ECM, resulting in the development of POP.

Primary Category Urogynaecology
for Abstract:

Supervisor Yes, My Supervisor has approved

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 25 M2

Author(s): Pieter Kruger (**Presenter**), Department of Obstetrics and Gynaecology,
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University of Clinical Fellow

Toronto Trainee

Status for First (ie
Presenting) Author:

Presentation Poster

Preference:

Abstract Title: Use of Validated Standardized Questionnaires in Urogynecology: A Survey

Abstract Keywords: pelvic floor disorders, symptom and quality of life questionnaires, clinical usefulness

Précis:

Urogynecologists and other specialists who treat women with pelvic floor disorders make use of validated symptom and quality of life questionnaires in clinical practice.

Abstract:

Objective: The objectives are to determine how many FPMRS specialists use standardized questionnaires, which specific questionnaires are being used and the reason for their usage or non-usage.

Methods: A web based electronic survey has been developed to determine: 1) the frequency of usage of standardized questionnaires by specialists who are treating women with pelvic floor disorders, 2) the specific questionnaires used, and 3) the rationale behind these choices. The survey recipients are approximately 50 specialists worldwide (but primarily in North America) who practice FPMRS. An email invitation to participate in a short anonymous electronic survey ("Survey Monkey") was sent. A total of 3 reminder emails will be sent at 2-3 week intervals. Results will be collated on the website's database and descriptive statistics performed.

Results: With the first mailing within the first week of the survey initiation 6 physicians responded. 83% of respondents make use of one or more symptom and/or quality of life questionnaires in their practice. Of those respondents who use these questionnaires 60% use the Urogenital Distress Inventory and Pelvic Floor Distress Inventory. Other questionnaires that were used in lesser frequency were International Prostate Symptom Score, Bristol Female Lower Urinary Tract Symptom Questionnaire, Kings Health Questionnaire and the Pelvic Floor Incontinence Questionnaire. Questionnaires were used to guide clinical management and for research purposes. Most physicians collect data in the office in paper format as opposed to electronic format prior to physician consultation (83%).

Conclusion: Validated symptom and quality of life questionnaires are being used by FPMRS specialists to aid in clinical management and research.

Primary Category for Abstract: Urogynaecology

Secondary Category for Abstract: Pelvic Floor Disorders

Supervisor Approval: Yes, My Supervisor has approved

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 38 M3

Author(s): Shira Gold (**Presenter**), Department of Obstetrics and Gynaecology, University of Toronto
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University of Toronto Trainee Status for First (ie Presenting) Author: Medical Student

Presentation Preference: Oral

Abstract Title: The Impact of Social Determinants of Health on Post Partum Older Primiparous Women's Perceptions of Prenatal Care: A needs assessment.

Abstract Keywords: Prenatal care, Maternal age, Older, Primiparous, Post partum, Social determinants of health, Health literacy, Socioeconomic status

Précis:

First time mothers over 40 were asked to reflect on prenatal care received and identified areas of weakness including post-delivery support and communication.

Abstract:

Objective: The objective of this study was to identify areas of prenatal care that first time mothers over the age of 40 perceive as inadequate.

Methods: This study used a mixed method design involving quantitative measures of health literacy and socioeconomic status, and qualitative measures of postpartum perceptions of prenatal care using semi-structured interviews. Women were recruited from the postpartum ward at Mount Sinai Hospital within forty-eight hours of delivery. During the single study visit, participants completed a short survey regarding demographic information, the Rapid Estimate of Health Literacy in Medicine – Short Form (REALM-SF), and participated in an audio-recorded semi-structured interview. Patients were categorized as low, medium, or high socioeconomic status and REALM-SF scores were correlated to grade reading levels. Semi-structured interviews were analyzed using thematic content analysis.

Results: Many of the participants in this study perceived a lower degree of risk to themselves than that described for their age group in the literature. Most patients were aware of fertility risks and trisomy 21 but not other pregnancy risks. Most commonly patients accessed information through prenatal classes, their physicians, the internet, books, friends and family. Most were satisfied with the prenatal care they received overall, but were able to identify specific areas of weakness, including post-delivery support, and problems in communication with the health care team. None of the participants were able to identify any age-specific resources that would have improved their prenatal care. Most participants were of high socioeconomic status and health literacy levels, which may explain the lower rates of complications than expected for their age group in the literature.

Conclusions: It is important to rely on patients to determine potential areas of quality improvement. Though participants were unable to identify resources specific to their age group, they were able to highlight several areas of weakness that can be improved upon in general prenatal care, including post-delivery support, and better communication with the health care team.

Primary Category Obstetrics
for Abstract:

Secondary Prenatal Care
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 79 M5

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University of Medical Student
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Status for First (ie
Presenting) Author:

Presentation Poster
Preference:

Abstract Title: Identifying Barriers to Colposcopy Services in Women with Abnormal Pap Smears at Women's College Hospital

Abstract Keywords: gynaecology, colposcopy, pap smear, barrier assessment

Précis:

Women with abnormal pap smears find patient errors in appointment date, personal or family illness, and overly early reminders as barriers to accessing colposcopy services.

Abstract:

Objective: The goal of this study was to qualitatively investigate barriers to colposcopy attendance in women with abnormal pap smears at Women's College Hospital.

Methods: This is a mixed-methods study. Women referred to the Women's College Gynaecology Colposcopy Clinic that missed, cancelled or rescheduled their colposcopy appointment between January 1, 2013 and April 1, 2014 were contacted to participate. After obtaining consent, demographic information and chart data were collected and a semi-structured telephone interview regarding barriers to colposcopy attendance was conducted and recorded. Data collection and analysis occurred simultaneously. Audio recordings were transcribed and key themes were identified using content analysis.

Results: Current themes that have been identified include patient errors in appointment date, personal or family illness, and overly early reminders. Data collection and analysis are still ongoing.

Conclusion: Women referred to the clinic have currently reported patient errors in appointment date, personal or family illness, and overly early reminders as barriers to attending their colposcopy appointments. The qualitative results gathered from this study may contribute to a better understanding of barriers to accessing care in this population and thus allow us to identify areas for improvement that have not yet been explored.

Primary Category Gynaecology
for Abstract:

Secondary Health Care Delivery
Category for
Abstract:

Supervisor Yes, My Supervisor has approved
Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

Abstract - ID: 76

M4

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University of Toronto Trainee Status for First (ie Presenting) Author: Presentation Clinical Fellow

Preference: Oral

Abstract Title: The Effect of Preoperative Waiting Time on the Quality of Life of Urogynaecology Patients as Compared to Orthopaedic Patients: Interim Results

Abstract Keywords: Pelvic Organ Prolapse, Surgical Wait Time, Quality of Life

Précis:

Given that women awaiting urogynaecological surgery have comparable mental health issues to women awaiting orthopaedic surgery, surgical wait times for prolapse repair must be improved.

Abstract:

Objective: The prevalence of pelvic organ prolapse (POP) and the wait time for surgical management are both increasing. Maximum surgical wait times have been set for hip or knee replacements, but not for POP repairs. This study aims to compare the quality of life scores for females awaiting surgery for POP to those for females awaiting surgery for hip or knee replacement. This study also aims to compare surgical wait times between these two groups.

Methods: This is a prospective cohort study conducted at Mount Sinai Hospital with ethics approval. Following informed written consent, women awaiting surgery for hip or knee replacement and women awaiting surgery for POP completed a validated quality of life questionnaire (SF-36). Urogynaecology patients also completed validated questionnaires assessing symptoms of urinary incontinence (UDI-6 and IIQ-7) while orthopaedic patients

completed a validated questionnaire assessing symptoms of osteoarthritis (WOMAC). Wait times for surgery were recorded. The goal will be to recruit 125 women each from the urogynaecology and orthopaedic clinics.

Results: There are currently 119 and 115 women recruited from the urogynaecology and orthopaedic clinics respectively. The mean WOMAC score for orthopaedic patients was 58.1. Mean UDI-6 and IIQ-7 scores for urogynaecology patients were 10.8 and 10.2 respectively. The mean physical component score for quality of life on the SF-36 was significantly worse for the orthopaedic patients compared to the urogynaecology patients (29.3 versus 41.2 respectively, $p<0.001$). The mean mental health component scores of the SF-36 were similar between both orthopaedic and urogynaecology patients (44.1 versus 41.4 respectively, $p=0.21$). The mean wait time for hip or knee replacement surgery was 71 days which was significantly shorter than the mean wait time of 196 days for POP surgery ($p<0.001$).

Conclusion: Physical symptoms affecting quality of life are worse for orthopaedic patients awaiting hip or knee replacement compared to urogynaecology patients awaiting POP surgery. Mental health symptoms are similar amongst orthopaedic and urogynaecology patients. The mean wait time for POP surgery is significantly longer than the mean wait time for hip or knee replacement. In light of the comparable mental health symptoms between the two groups, improving wait times for POP surgery should be addressed.

Primary Category

for Abstract: Urogynaecology, Pelvic Organ Prolapse

Supervisor

Approval:

Conflict of Interest: Neither I nor my co-authors have a conflict of interest to disclose

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Presenters by Last Name

P/O #	Name	Category*	Supervisor(s)
M5	Abdelmasih, Monica	M	Amanda Selk
H4	AlKudmani, Basheer	F	Prati Sharma
O3	Alahari, Sruthi	G	Isabella Caniggia
C5	Baello, Stephanie	G	Stephen Matthews
O5	Bapat, Priya	G	Howard Berger
E1	Behan, Lucy Ann	F	Robert Casper
A5	Behrouzi, Bahar	UG	Clifford Librach
B6	Blanco Mejia, Sonia	O	E. Anne Claessens
K1	Bouchard-Fortier, Genevieve	F	Lilian Gien
D3	Carpe, Nicole	M	Amanda Selk
D4	Chaikof, Michael	M	Clifford Librach
H1	Chan, Crystal	F	Ellen Greenblatt
H6	Chan, Pamela	G	Clifford Librach
E3	Chauvin, Sarah	G	Isabella Caniggia
K3	Cheong, Clara	M	Marcus Bernardini
F2	Chow, Theresa	G	Ian Rogers
O8	Cybulska, Paulina	R	Marcus Bernardini
O10	D'Souza, Rohan	F	John Kingdom
H5	Dagher, Marc	M	Clifford Librach
D2	De Souza, Leanne	G	Joel Ray
K2	Djedovic, Vladimir	G	Theodore Brown
I1	El-Chaar, Darine	F	Greg Ryan
F5	Fish, Joe	UG	Clifford Librach
C4	Ghasemi, Farshad	G	S Lee Adamson
M3	Gold, Shira	M	Amanda Selk
A3	Habiba, Ummi	R	Matthew Cesari
F4	Hacibekiroglu, Sabiha	G	Andras Nagy
I6	Hahn, Kirah	PD	Clifford Librach
O13	Heng, Jan	PD	Stephen Lye
C2	Hodges, Ryan	F	
D5	Hubner, Nicole	F	Lisa Allen
L2	Hunter, Tiffany	F	Kellie Murphy
D6	Hunter, Jennifer	M	Yolanda Kirkham
G1	Husslein, Heinrich	F	Guyline Lefebvre
E6	Isaac, Sarah	G	S Lee Adamson
C6	Javam, Mohsen	G	Stephen Matthews
B3	Jones, Claire	F	Heather Shapiro
I2	Kearney, Samantha	G	William Gibb
M2	Kruger, Pieter	F	Patricia Lee

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P/O #	Name	Category*	Supervisor(s)
M1	Kufaishi, Hala	G	Oksana Shynlova
L5	Kulkarni, Anjali	M	Emily Wright
J6	Kwan, Melissa	G	Stephen Lye
H2	Lagunov, Alexander	G	Clifford Librach
B5	Lazer, Tal	F	Clifford Librach
A1	LePage, Katherine A	M	Amanda Selk
K6	Lennox, Genevieve K	R	Marcus Bernardini
M4	Leong, Yvonne	C	Harold Drutz
A4	Li, Adrienne L.K.	R	Wendy Woflman
J2	Liao, Pamela	R	Howard Berger
F6	Librach, Matthew T	UG	Clifford Librach
L4	Mardimae, Alexandra	M	Yolanda Kirkham
A2	Margel, Daniel	F	Jamie Kroft
O1	Masih, Shannon	G	Andrea Lausman
I3	Mayo, Karli L	R	Howard Berger
J5	McCaffrey, Carmen	R	Jon Barrett
C3	Mei-Dan, Elad	F	Jon Barrett
C1	Melamed, Nir	F	Greg Ryan
CC1	Melamed, Nir	F	Howard Berger
D1	Menzies, Rebecca	R	Andrea Lausman
G5	Mitra, Sanjani	F	Astrid Christoffersen-Deb
O2	Mitri, Frederic	F	Robert Casper
J1	Moisiadis, Vasilis G	G	Stephen Matthews
J3	Morency, Anne-Maude	F	Kellie Murphy
E4	Nadeem, Lubna	PD	Stephen Lye
I5	Nguyen, Tina Tu-Thu	G	Stephen Lye
CC3	Nguyen, Julie M.V.	R	Adrian Brown
K4	Park, Soyeon	G	Theodore Brown
B4	Paterson, Nicole	R	Cynthia Maxwell
G6	Ragan, Kelsey M	M	Astrid Christoffersen-Deb
J4	Rahman, Fabiha	UG	Stephen Matthews
O11	Rennie, Monique Y	PD	S Lee Adamson
O6	Shathasivam, Premalatha	PD	Theodore Brown
I4	Shea, Alison K	R	Ori Nevo
CC2	Shirreff, Lindsay	F	Guylaine Lefebvre
O9	Shirreff, Lindsay	F	Guylaine Lefebvre
H3	Shlush, Ekaterina	F	Tanya Barretto
O12	Shore, Eliane M	F	Guylaine Lefebvre
G2	Simpson, Andrea N	R	Rory Windrim
O14	Snelgrove, John	R	Kellie Murphy

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P/O #	Name	Category*	Supervisor(s)
CC4	Spitzer, Rachel F		
K5	Stewart, Jocelyn M	PD	Barry Rosen
O7	Szaraz, Peter T	PD	Andrée Gauthier-Fisher
E5	Tran, Dean	G	Denise Belsham
E2	Treen, Alice K	G	Denise Belsham
B2	Vyas, Parshvi	G	Clifford Librach
F1	Yang, Huijuan	G	Ian Rogers
L1	Yang, Siwen	G	John Challis
F3	Yanofsky, Russell P	UG	Clifford Librach
G3	Yu, Jing	M	Clifford Librach
L3	Yusuf, Muhseen	R	Mark Yudin
O4	Zebede, Salomon	F	Harold Drutz
B1	Zhang, Nicole D	G	
G4	Zipursky, Amy R	M	Astrid Christoffersen-Deb

*University of Toronto Trainee Category: G=Graduate Student; F=Clinical Fellow; M=Medical Student (UG=Undergraduate Student); PD=Post-Doctoral Fellow; R=Resident; O=Other (ie not a University of Toronto trainee)

Presenters by Abstract # and Session

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- O1 Masih, Shannon
- O2 Mitri, Frederic
- O3 Alahari, Sruthi
- O4 Zebede, Salomon
- O5 Bapat, Priya

Oral Session II (11:10 a.m. -12:10 p.m.)

- O6 Shathasivam, Premalatha
- O7 Szaraz, Peter
- O8 Cybulska,Paulina
- O9 Shirreff, Lindsay

Afternoon

Oral Session III (1:50-3:05 p.m.)

- O10 D'Souza, Rohan
- O11 Rennie, Monique
- O12 Eliane, Shore
- O13 Heng, Jan
- O14 Snelgrove, John

Presenters by Abstract # and Session cont'd

POSTERS (P)

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(Groups A-G) (10:05-11:05 a.m.)

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A1 LePage, Katherine
A2 Margel, Daniel
A3 Habiba, Umami
A4 Li, Adrienne
A5 Behrouzi, Bahar

Poster Group B

B1 Zhang, Nicole
B2 Vyas, Parshvi
B3 Jones, Claire
B4 Paterson, Nicole
B5 Lazer, Tal
B6 Blanco Mejia, Sonia

Poster Group C

C1 Melamed, Nir
C2 Hodges, Ryan
C3 Mei-Dan, Elad
C4 Ghasemi, Farshad
C5 Baello, Stephanie
C6 Javam, Mohsen

Poster Group D

D1 Menzies, Rebecca
D2 De Souza, Leanne
D3 Carpe, Nicole
D4 Chaikof, Michael
D5 Hubner, Nicole
D6 Hunter, Jennifer

Poster Group E

E1 Behan, Lucy Ann
E2 Treen, Alice
E3 Chauvin, Sarah
E4 Nadeem, Lubna
E5 Tran, Dean
E6 Isaac, Sarah

Poster Group F

F1 Huijuan, Yang
F2 Chow, Theresa
F3 Yanofsky, Russell
F4 Hacibekiroglu, Sabiha
F5 Fish, Joe
F6 Librach, Matthew

Poster Group G

G1 Husslein, Heinrich
G2 Simpson, Andrea
G3 Yu, Jing
G4 Zipursky, Amy
G5 Mitra, Sanjana
G6 Ragan, Kelsey

Presenters by Abstract # and Session cont'd

POSTERS (P)

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Poster Group H

- H1 Chan, Crystal
- H2 Lagunov, Alexander
- H3 Shlush, Ekaterina
- H4 AlKudmani, Basheer
- H5 Dagher, Marc
- H6 Chan, Pamela

Poster Group I

- I1 El-Chaar, Darine
- I2 Kearney, Samantha
- I3 Mayo, Karli
- I4 Shea, Alison
- I5 Nguyen, Tina Tu-Thu
- I6 Hahn, Kirah

Poster Group J

- J1 Moisiadis, Vasilis
- J2 Liao, Pamela
- J3 Morency, Anne-Maude
- J4 Rahman, Fabiha
- J5 McCaffrey, Carmen
- J6 Kwan, Melissa

Poster Group K

- K1 Bouchard-Fortier, Genevieve
- K2 Djedovic, Vladimir
- K3 Cheong, Clara
- K4 Park, Soyeon
- K5 Stewart, Jocelyn
- K6 Lennox, Genevieve

Poster Group L

- L1 Yang, Siwen
- L2 Hunter, Tiffany
- L3 Yusuf, Muhseen
- L4 Mardimae, Alexandra
- L5 Kulkarni, Anjali

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- M1 Kufaishi, Hala
- M2 Kruger, Pieter
- M3 Gold, Shira
- M4 Leong, Yvonne
- M5 Abdelmasih, Monica

ANNOUNCEMENTS

Apr-23-14 5:16 PM ET

JOIN US FOR THE LAUNCH!

Please do not forget to attend the rollout of the Department's new **Strategic Plan** on

Thursday, May 15th, 2014 from 6:00 – 8:00pm at the lovely Pantages Hotel, 200 Victoria Street, Toronto.

RSVP to Colleen Fox at colleen.fox@utoronto.ca

Apr-24-14 2:43 PM ET

Welcome to the conference

Welcome to the 31st Annual Department of Obstetrics and Gynaecology Research Day. This year we received a record number of abstract submissions – over 90 – from our trainees performing research in nearly every aspect of Obstetrics and Gynaecology. The impressive array of abstracts includes basic science, translational research, clinical studies, global health research, and knowledge transfer and health delivery research.

As in recent years, we have organized the oral presentations into three sessions meant to provide you with a broad view of the type and quality of research ongoing within the Department. In contrast, the poster presentations have been placed into thematic groupings, as far as possible, to facilitate your ability to view the research most relevant to your interests. There is plenty of time to visit the posters, as they will be up all day, and we hope you take the opportunity to view some of the exciting and innovative work being conducted by your colleagues.

We warmly welcome Professor Aidan Halligan of University College London Hospitals in London as this year's Henderson Lecturer. Professor Halligan is a leader in UK healthcare administration with a focus on clinical governance, quality and patient safety. His presentation "leadership in a challenging clinical environment" will resonate with our faculty.

We have implemented several new initiatives this year that we hope will enhance Research Day. To save on paper and printing costs, we have eliminated the full-length abstract book in favour of this on-line APP. Here you have access to all the day's events, including announcements, full abstracts, schedules, maps, awards, information on Professor Halligan, and evaluation forms in an easy-to-search format.

Those without a tablet or smartphone can go online and download what they wish from our website. An abbreviated Program-at-a-Glance will also be provided at the registration desk.

Take the opportunity to visit Collaboration Corner, located near the coffee break stations, to see if you can contribute to department-wide research initiatives.

Also, this year's event is eligible for up to 7.5 CME credits. Please see this part of the APP for more information.

Lastly, feedback from you about Research Day is critical to the Research Committee as we plan the event for next year. Please take the time to complete the evaluation form and tell us what you would like to see changed, preserved, or enhanced. You can also convey your thoughts directly to a member of the Research Committee.

At the close of Research Day, please join your colleagues at the wine and cheese reception for the JW Knox Ritchie Research Awards Ceremony and a complimentary glass of wine. We look forward to celebrating the conclusion of a stimulating day and seeing you all there.

Best regards,
John Kingdom
Gordon C Leitch Chair
Department of Obstetrics and Gynaecology

May-02-14 4:28 PM ET

A new Sponsor!

We are pleased to welcome **Dapasoft Inc.** as a new sponsor of our Educational Partnership Program. **Dapasoft Inc.** joins **Abbvie, Bayer Inc and Hologic** and we are very grateful for their support.

May-06-14 6:57 PM ET

Program-at-a-Glance with presenters listed

Please go to this link

http://www.obgyn.utoronto.ca/research/ResearchDay/Research_Day_2014.htm on our website to see our Program-at-a-Glance with presenters listed.

May-08-14 10:52 PM ET

1-2-3-Go! We're moving!

After all these years, the Department of Obstetrics and Gynaecology office is moving from 92 College to a new location.

New Address, as of May 26th 2014.

University of Toronto, Faculty of Medicine
Department of Obstetrics and Gynaecology
123 Edward Street, 12th Floor
Toronto, ON M5G 1E2

May-08-14 11:09 PM ET

For Wireless Access at Research Day 2014

For Wireless Access:

Conference ID: Research2014

Password: 2014Research

May-08-14 11:40 PM ET

Help Support a Good Cause!

Please support our Residents' efforts to raise money for cancer research (Team Fallopian Tubes for the Ride to Conquer Cancer) by visiting their Bake Sale table at Research Day!

May-12-14 4:46 PM ET

AND THE WINNERS ARE...

The **2014 JW Knox Ritchie Research Awards** for best abstract/presentation by trainee category were awarded during the celebratory wine and cheese reception at the end of Research Day. We are very pleased to announce the following winners:

Clinical Fellow: A tie!:

Heinrich Husslein (Supervisor: Guylaine Lefebvre)

G1 Validation of the Generic Error Rating Tool (GERT) in gynecologic laparoscopy

AND

Rohan D'Souza (Supervisor: John Kingdom)

O10 Unfractionated Heparin, Placental Ultrasound and Placental Histopathology: Secondary analysis of a pilot randomized controlled trial

Post-Doctoral Fellow: Another tie!

Lubna Nadeem (Supervisor: Stephen Lye)

E4 Progesterone Receptor A mediates de-repression of Connexin43 expression

AND

Monique Rennie (Supervisor: S Lee Adamson)

O11 Site-specific Increases in Utero- and Feto-placental Arterial Vascular Resistance in eNOS Deficient Mice Due to Impaired Arterial Enlargement

Resident: Paulina Cybulska (Supervisor: Marcus Bernardini)

O8 Ovarian High Grade Serous Cancer Xenografts as Pre-Clinical Models of Response to Chemotherapy

Graduate Student: Stephanie Baello (Supervisor: Stephen Matthews)

C5 Astrocyte-Derived Factors Increase Multidrug Resistance via P-glycoprotein at the Developing Blood-Brain Barrier

Student: Matthew Librach (Supervisor: Clifford Librach)

F6 Human Umbilical Cord-derived Perivascular Cells Promote Wound Healing in an In vitro Model of Cardiomyocyte Injury

Congratulations!