Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

28th ANNUAL RESEARCH DAY
& Henderson Lecture

FRIDAY, MAY 6, 2011

Hart House, University of Toronto,
7 Hart House Circle, M5S 3H3
8:00 a.m. to 6:30 p.m.
Abstract deadline: Monday, March 7, 2011

Lecturer: Dr. Philip Castle

Executive Director of the American Society
of Clinical Pathology (ASCP) Institute

Topic: Separating the Wheat from the Chaff:
The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer

http://www.obgyn.utoronto.ca/Research/ResearchDay.htm

For additional information or assistance, please contact Helen Robson at
helen.robson@utoronto.ca

The Department of Obstetrics & Gynaecology 28th Annual Research Day took place Friday, May 6, 2011. There were 14 oral and 61 poster presentations by trainees from the Department, covering a range of excellent research, both basic and clinical. There was also an excellent Henderson Lecture, delivered by **Dr. Philip Castle**, on the topic, "Separating the Wheat from the Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer". To revisit Research Day, have a look at our **Research Day Photo Album**.

We would like to thank everyone who participated and extend special thanks to all those faculty members who acted as Chairs and Judges and to the Research Committee, particularly Stephen Lye as Chair.

The **2011 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 the day. We are pleased to announce the following winners:

Clinical Fellow: A tie!
Tania Dumont (Supervisor: Lisa Allen) for Poster Presentation, J5, Utilization of Molecular Testing to Determine the Optimal Sampling Strategy for the Detection of Urogenital C. Trachomatis and N. Gonorrhoeae in Adolescent Females. Tania Dumont, Kaede Ota, Susan Richardson, Erin Barlow, Trisha Tulloch, Catherine Maser, Debra Katzman, Yvonne Yau, Lisa Allen.
AND
Ki**mberley Garbedian** (Supervisor: Barbara Cruickshank) for Poster Presentation J2, Conservative Management of Cervical Ectopic Pregnancy. Kimberley Garbedian, Ally Murji, Barbara Cruickshank.

Post-Doctoral Fellow: **Fergus McCarthy** (Supervisor: John Kingdom) for Oral Presentation O4, The Role of Peroxisome Proliferator Activated Receptor Gamma in Normal Rodent Pregnancy and an Animal Model of Preeclampsia. Fergus P McCarthy, Sascha Drewlo, Dora Baczyk, John Kingdom, Edward J Johns, Sarah K Walsh, Louise C Kenny.

Resident: **Daniela Caprara** (Supervisor: Mark Yudin) for Poster Presentation F2, A Descriptive Analysis of a Large Cohort of HIV-Positive Pregnant Women at One Canadian Urban Hospital. Daniela Caprara, Rajiv Shah, Jay MacGillivray, Mark H. Yudin.

Graduate Student: **Crystal Chan** (Supervisors: Ellen Greenblatt and Theodore J Brown) for Oral Presentation O9, Transcriptomic and Proteomic Analysis of Uterine Fluid Aspirates: A Minimally Invasive Approach to Determining Markers of Human Endometrial Receptivity. Crystal Chan, Carl Virtanen, Neil Winegarden, Terence Colgan, Theodore Brown, Ellen Greenblatt.

Medical Student: **Ingrid Lai** (Supervisor: Ellen Greenblatt) for Poster Presentation J6, Cultural Barriers to Fertility Treatment in the Toronto Chinese Community. Ingrid Lai, Samantha Yee, Ellen Greenblatt.

In addition, the **Papsin Award** for postgraduate resident in final year of training, based on teaching ability, mentorship activities and leadership, as chosen by peers, was awarded to**Eliane Shore**.

Please join us in congratulating the winners. We would also like to commend all the participants, both oral and poster presenters, for their valuable contribution to the continued success of Research Day.

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

RESEARCH DAY 2011 PROGRAMME-AT-A-GLANCE
Hart House, University of Toronto

Friday, May 6, 2011 (A.M.)

7:00 – 8:00 a.m.	**Poster Boards Delivered and Set up** [Great Hall] **Registration and Sponsor Set-up** [Southeast corner of south corridor on first floor and Lower Gallery]
8:00 a.m. on	**Poster Set-up for Presenters** [Great Hall]
8:00 a.m.	**Registration & Continental Breakfast** [Lower Gallery]
8:25 – 8:30 a.m.	**Welcome: Dr. Alan Bocking, Chair** [East Common Room]
8:30 – 9:45 a.m.	**Oral Session I (O1-O5)** [East Common Room]
9:45 – 10:05 a.m.	**Coffee Break & Poster Session I Walkabout** [Lower Gallery & Great Hall]
10:05 – 11:05 a.m.	**Poster Session I Tour** [Great Hall] **Groups A-F**
11:10 – 12:10	**Oral Session II (O6-O9)** [East Common Room]

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

RESEARCH DAY 2011 PROGRAMME-AT-A-GLANCE
Hart House, University of Toronto

Friday, May 6, 2011 (P.M.)

12:15 – 1:15 p.m.	**Lunch** [Lower Gallery and Quad if weather cooperates; Music Room if it does not]
1:20 – 2:35 p.m.	**Oral Session III (O10-O15)** [East Common Room]
2:35 – 3:05 p.m.	**Coffee Break & Poster Session II Walkabout** [Lower Gallery and Great Hall]
3:05 – 4:05 p.m.	**Poster Session II** [Great Hall] **Groups G-K**
4:05 – 4:20 p.m.	**Poster Takedown** [Great Hall]
4:30 – 5:30 p.m.	**Henderson Lecture** [Music Room] **Dr. Philip Castle,** Executive Director of the American Society of Clinical Pathology (ASCP) Institute **Topic:** Separating the Wheat from the Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer **Closing Remarks: Dr. Alan Bocking** [Music Room]
5:30 – 6:30 p.m.	**Wine & Cheese Reception** and **Papsin** and **JW Knox Ritchie Research Awards Presentations** [South Dining Room]

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

28th Annual

RESEARCH DAY

FRIDAY, MAY 6, 2011
Hart House, University of Toronto
7 Hart House Circle, M5S 3H3
8:00 a.m. – 6:30 p.m.

HENDERSON LECTURE: 4:30 p.m. – 5:30 p.m.

Separating the Wheat from the Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer
Dr. Philip Castle
Executive Director of the American Society of Clinical Pathology (ASCP) Institute

WINE & CHEESE RECEPTION: 5:30 – 6:30 P.M.

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

We gratefully acknowledge

the sponsorship of:

ABBOTT LABORATORIES LTD.

BAYER HEALTHCARE PHARMACEUTICALS

GLAXOSMITHKLINE CANADA

MERCK CANADA INC.

in support

of our

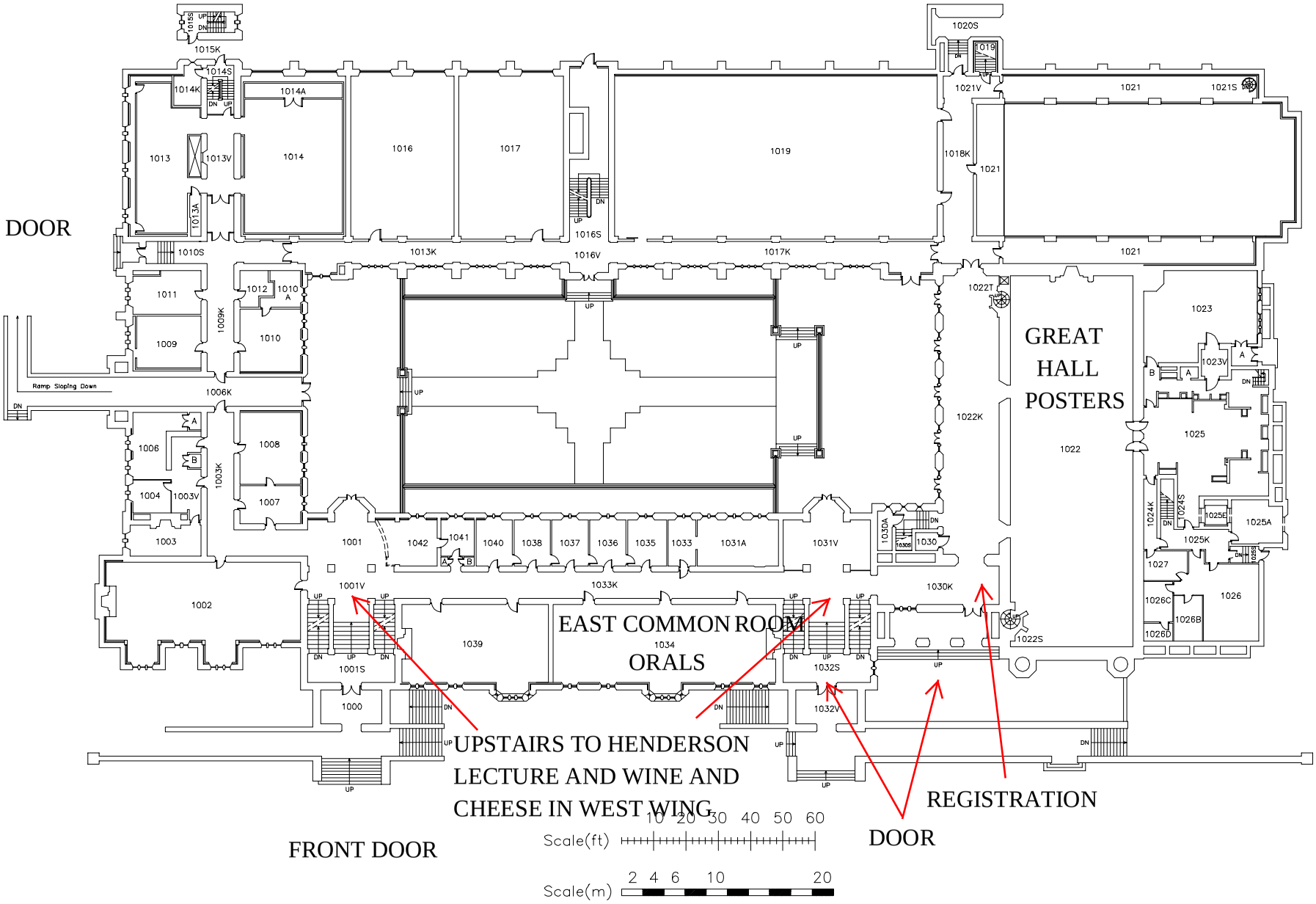
28th Annual Research Day.

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

28th ANNUAL RESEARCH DAY
Friday May 6, 2011

TABLE OF CONTENTS

HART HOUSE FIRST FLOOR



N

University of Toronto

Office of Space Management

HART HOUSE

Bldg #2

1st Floor

96/03

Revisions

96/06

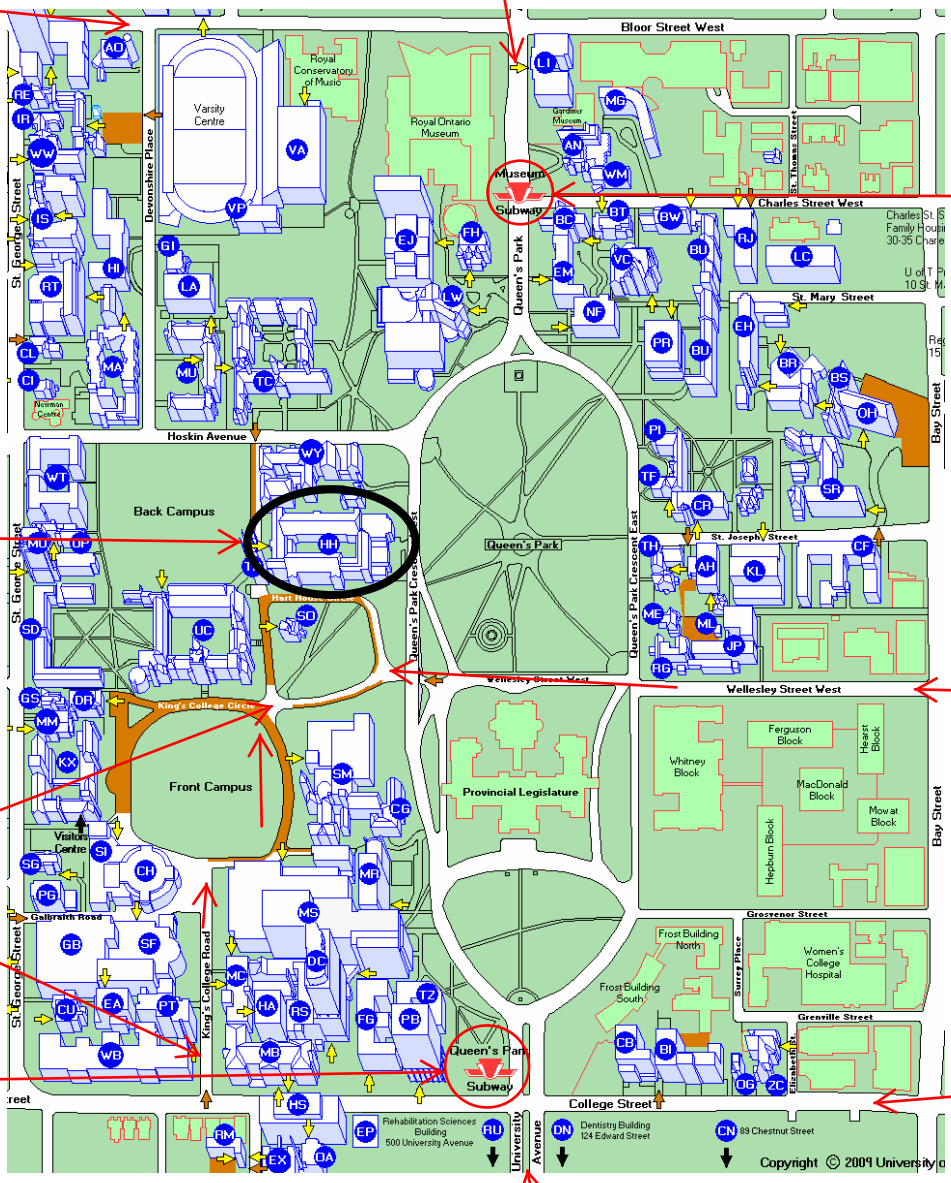
DWG. #

3 of 5

HART HOUSE
7 Hart House Circle, M5S 3H3
University of Toronto

Avenue Road/
Queen's Park

Bloor Street



Museum
Subway Station

Hart House

Take either Wellesley St West or King's College Road north off College to get to Hart House Circle.

Wellesley Street

Queen's
Park Station

College St.

Queen's Park/
University
Ave.

PROGRAM-AT-A-GLANCE

RESEARCH DAY 2011
Hart House, University of Toronto

Friday, May 6, 2011
MORNING

8:00 am on — **Poster Set-up for Presenters** (Great Hall)

8:00 am — **Registration & Continental Breakfast** (Lower Gallery)

8:25 – 8:30 am — **Welcome: Dr. Alan Bocking, Chair** (East Common Room)

8:30 – 9:45 am — **Oral Session I (O1-O5)** (East Common Room)
Chair/Judge: Dr Stephen Lye
Judges: Drs Barbara Cruickshank and Lisa Allen

9:45 – 10:05 am — **Coffee Break & Poster Session I Walkabout** (Lower Gallery & Great Hall)

10:05 – 11:05 am — **Poster Session I Tour** (Great Hall)
Groups A-F

	Chairs/Judges	Judges
A	Drs Wusun Paek and Andrea Jurisicova	Dr Sony Sierra
B	Drs John Kingdom and Fay Weisberg	Dr Howard Berger
C	Drs TJ Brown and Artin Ternamian	Dr Sari Kives
D	Drs Allan Covens and Joan Murphy	Dr Terence Colgan
E	Drs Hani Akoury and Rose Kung	Dr Ori Nevo
F	Drs Elliot Lyons and May Alarab	Dr Anne Claessens

11:10 am– 12:10 pm — **Oral Session II (O6-O9)** (East Common Room)
Chair/Judge: Dr Robert Casper
Judges: Drs S Lee Adamson and Lilian Gien

PROGRAM-AT-A-GLANCE

RESEARCH DAY 2011
Hart House, University of Toronto

Friday, May 6, 2011
AFTERNOON

12:15 – 1:15 pm **Lunch**
(Lower Gallery and Quad if weather cooperates; Music Room, 2nd Floor, if not)

1:20 – 2:35 pm **Oral Session III (O10-O14)** (East Common Room)
Chair/Judge: Dr Kellie Murphy
Judges: Drs Adrian Brown and Andrea Jurisicova

2:35 – 3:05 pm **Coffee Break & Poster Session II Walkabout**
(Lower Gallery and Great Hall)

3:05 – 4:05 pm **Poster Session II** (Great Hall)
Groups G-K

	Chairs/Judges	**Judges**
G	Drs Isabella Caniggia and Karen Glass	Dr Clifford Librach
H	Drs S Lee Adamson and Ian Rogers	Dr John Kingdom
I	Drs Michelle Letarte and Ellen Greenblatt	Dr Navid Esfandiari
J	Drs Christine Derzko and Paul Bernstein	Dr Richard Pittini
K	Drs Kellie Murphy and TJ Brown	Dr Cynthia Maxwell

4:05 – 4:20 pm **Poster Takedown** (Great Hall)

4:30 – 5:30 pm **Henderson Lecture** (Music Room)
Dr. Philip Castle
Executive Director, American Society of Clinical Pathology (ASCP) Institute
Topic: Separating the Wheat from the Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer

Closing Remarks: Dr. Alan Bocking (Music Room)

5:30 – 6:30 pm **Wine and Cheese Reception** and **Papsin** and **JW Knox Ritchie Research Awards Presentations** (South Dining Room)

.

PROGRAM

28TH ANNUAL RESEARCH DAY
Friday May 6, 2011
Hart House, University of Toronto
7 Hart House Circle, M5S 3H3

8:00 a.m. on **Poster Set-up for Presenters** (Great Hall)

8:00 a.m. **Registration & Continental Breakfast** (Lower Gallery)

8:25 – 8:30 a.m. **Welcome: Dr. Alan Bocking, Chair** (East Common Room)

8:30 – 9:45 a.m. **ORAL SESSION I** (East Common Room)
(O1-O5) (5 presentations @15 minutes: 10 minute presentation + 5 minutes for questions)
Chair/Judge: Dr Stephen Lye
Judges: Drs Barbara Cruickshank and Lisa Allen

8:30-8:45 **O1 Management of Abnormal Cervical Cytology Screening in Adolescents and Young Women: A Descriptive Analysis**
Geneviève Bouchard-Fortier[R](1), Lawrence Paszat(2), Joan Murphy(1,3)**.**
(1) Department of Obstetrics & Gynaecology, University of Toronto (2) Senior scientist ICES, Associate Professor HPME and Dalla Lana School of Public Health, University of Toronto (3) Department of Gynecologic Oncology, Princess Margaret Hospital.

8:45-9:00 **O2 Prevalence Of Renal Anomalies In Women With Mullerian Duct Anomalies Diagnosed By 3d Sonohysterography**
Beth Gunn[R](1), Alex Hartman(2), Joel RK Moody(3), Heather Shapiro(1).
(1)Centre for Fertility and Reproductive Health, Department of Obstetrics &Gynecology, Mount Sinai Hospital, (2)True North Imaging, (3)Prosserman Centre for Health Research, Samuel Lunenfeld Research Institute, Mount Sinai Hospital.

9:00-9:15 **O3 The Effect of *Lactobacillus Rhamnosus* Gr-1 on Amnion Cytokine and Chemokine Production**
Rebecca Koscik [G](1,2), Wei Li (2), Andrew Martins (3), Sun O Kim (3), Gregor Reid (3), John RG Challis (1), Alan D Bocking (1,2).
(1) Departments of Physiology and Obstetrics and Gynecology, University of Toronto, (2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3) Department of Microbiology and Immunology, Siebens-Drake Research Center, and the Canadian Research and Development Center for Probiotics, University of Western Ontario

9:15-9:30 **O4 The Role of Peroxisome Proliferator Activated Receptor Gamma in Normal Rodent Pregnancy and an Animal Model of Preeclampsia.**
Fergus P McCarthy [PD](1,2), Sascha Drewlo (1), Dora Baczyk (1), John Kingdom (1), Edward J Johns (2), Sarah K Walsh (2), Louise C Kenny (2)
(1) Samuel Lunenfeld Research Institute & Department of Obstetrics and Gynaecology, Mount Sinai Hospital, University of Toronto, **(2)** Department of Obstetrics and Gynaecology & Anu Research Centre, University College Cork, Cork, Ireland.

9:30-9:45 **O5 Body Mass Index (BMI) Effect on Induction of Labor (IOL) Outcome**
Shay Porat[F], Cynthia Maxwell, Mathew Sermer and Dan Farine
Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, University of Toronto.

9:45-11:05 am **POSTER SESSION I**

9:45-10:05 **Coffee Break & Poster Session I Walkabout** (Lower Gallery & Great Hall)

10:05 – 11:05 **Poster Session I Tour, Groups A-F** (Great Hall)

GROUP A:

Chairs/Judges: Drs Wusun Paek and Andrea Jurisicova
Judge: Dr. Sony Sierra

P-A1 **Characterization of Pro-Apoptotic Mcl-1 Isoforms in the Regulation of Cell Death**
Jessica Ebrahimi[M](1), Manpreet Kalkata(3), Julia Garcia(1), Isabella Caniggia(1,2,3)
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (2)Department of Obstetrics and Gynaecology, (3)Department of Physiology, University of Toronto.

P-A2 **Developmental Basis of Placental Infarction**
Christopher Franco[M](1), Melissa Walker(1,2), Julie Robertson(1,2), Brendan Fitzgerald(1,3), Sarah Keating(1,3), Anne McLeod(1,4), John Kingdom(1,2).
(1) University of Toronto, Faculty of Medicine, (2)Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3)Department of Pathology & Laboratory Medicine, Mount Sinai Hospital, (4)Department of Medicine, Sunnybrook Health Sciences Centre.

P-A3 **Characterization and Regulation of Acid Ceramidase and Sphingomyelinase in Normal and Pathological Human Placenta**

Megan Melland-Smith[G](1,2,3), Rashef Tal and Isabella Caniggia(1,2,3)
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Departments of (2)Physiology and (3)Obstetrics and Gynaecology, University of Toronto.

P-A4 **Characterization of Mechanisms of Sflt-1 Anti-Angiogenic Function in Preeclampsia**

Dennis K. Lee [PD](1), Isabella Caniggia(3,4), Ori Nevo(1,2)**.**
(1) Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre, (2) Department of Obstetrics and Gynecology, University of Toronto (3) Department of Physiology, University of Toronto and (4) the Samuel Lunenfeld Research Institute, Mount Sinai Hospital.

P-A5 **The Role of Decidual Neutrophils in Mouse Angiogenesis (Work-in-Progress)**

Melissa Kwan [G](1,2), Hagai Amsalem (3), Caroline Dunk (2), Stephen Lye (1,2,4).
(1) Department of Physiology, Faculty of Medicine, University of Toronto, (2) Research Centre for Women's and Infants' Health, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3) Hadassah School of Medicine, Hebrew University, Jerusalem, Israel, (4) Department of Obstetrics and Gynecology, Faculty of Medicine, University of Toronto

P-A6 **Expression of Pro- and Anti-Angiogenic Isoforms of VEGFA in the Placenta and Maternal Organs during Pregnancy in Mice**

Abhijeet Minhas [G](1,2,4), Shannon Bainbridge (3), Dawei Qu (1), Hoon-Ki Sung (1), Andras Nagy (1), and S. Lee Adamson (1,2,4).
(1) Samuel Lunenfeld Research Institute, (2) Mount Sinai Hospital; Department of Obstetrics & Gynecology, University of Toronto; (3) Interdisciplinary School of Health Sciences, University of Ottawa; (4) Department of Physiology at the University of Toronto.

GROUP B:

Chairs/Judges: Drs John Kingdom and Fay Weisberg
Judge: Dr Howard Berger

P-B1 **Identifying Pathways Involved in Oocyte Fate via Regulation of Mcl-1**

Shakib Omari[G](1), Andrea Jurisicova(1,2)**.**
(1) Department of Physiology, University of Toronto, (2) Department of Obstetrics and Gynecology, Samuel Lunenfeld Research Institute, Mount Sinai Hospital

P-B2 **Human Menopausal Gonadotropin (hMG) *vs.* Recombinant Follicle Stimulating Hormone (Rfsh) for Ovarian Stimulation in Pcos Patients Undergoing IVF**

Stephanie Grover [O], Prati A Sharma, Agata Sojecki, Hanna Balakier, Clifford Librach.
CReATe Fertility Centre, Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, Women's College and Sunnybrook Health Sciences Centre, University of Toronto.

P-B3 **Using Nimodipine, a Calcium Channel Blocker, to Delay a Spontaneous LH Surge in Women with Regular Menstrual Cycles**

Dan Nayot [R](1), **Shany Klachook [O]** (2), Robert F Casper (1,2)**.**
(1) Department of Obstetrics & Gynaecology, Mount Sinai Hospital, University of Toronto. (2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, University of Toronto.

P-B4 **Serum and Follicular Fluid Complement Cascade Factors during Stimulated Cycles in Patients with PCOS**

Shlomit Kenigsberg[O](1), Shir Dar(1), Leila Maghen(1), Stephanie Grover(1), Clifford Librach(1, 2, 3).
(1) CReATe Fertility Centre; (2) Department of Obstetrics & Gynaecology, University of Toronto; (3) Division of Reproductive Endocrinology and infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre.

P-B5 **Regulation of Autophagy by Nlrp5 in Preimplantation Embryos. (Work-in-Progress)**

Taline Naranian[G](1,2), Ala Perumalsamy(1), Russanthy Velummailum(1), Tong ZhiBin(3), Igor Jurisica(4), Lawrence Nelson(3) and Andrea Jurisicova(1,2).
(1)Samuel Lunenfeld Research Institute, Obstetrics and Gynecology, Mount Sinai Hospital (2)Department of Physiology, Mount Sinai Hospital, University of Toronto, (3)Developmental Endocrionology Branch, National Institutes of Child Health and Human Development, National Institutes of Health, (4) Ontario Cancer Institute, Princess Margaret Hospital.

P-B6 **Comparing Recombinant FSH (recFSH) Alone to a Mixed recFSH/HMG Regimen for IVF Stimulation in an Anonymous Ovum Donor Population.**

Agata Sojecki[O](1), Shir Dar(1) and Clifford L Librach(1,2,3)
(1)CReATe Fertility Center; (2)Department of Obstetrics & Gynaecology, University of Toronto; (3)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Sunnybrook Health Sciences Centre.

GROUP C:

Chairs/Judges: Drs Theodore J Brown and Artin Ternamian
Judge: Dr Sari Kives

P-C1 **Caesarean Section in the Second Stage**

Kalpana Singh Sharma [R], Rory Windrim, John Kingdom
Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital

P-C2 **Does Surgical "Warming-Up" Improve Operative Performance?**

Jamie Kroft [F] (1), Rebecca Arthur (2), Richard Pittini (1) (1) Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre
(2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, Mount Sinai Hospital

P-C3 **A Novel Approach to the Surgical Management of Clitoral Phimosis**

Jamie Kroft [F], Michael Shier
Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre

P-C4 **The Laparoscopic Myomectomy: An Eight-Year Experience at a Canadian Hospital with an Advanced Laparoscopy Training Program**

Lindsay Shirreff [R](1), Grace Liu (2), Toni Burbidge (3), Rose Kung (2), Herbert Wong (2), Kay Lie (2).
(1) Department of Obstetrics & Gynaecology, University of Toronto, (2) Sunnybrook Health Sciences Centre, (3) University of Toronto.

P-C5 **Postgraduate Laparoscopic Skills Acquisition with Home-Based Laparoscopic Trainers – Is Peer Learning or Top-Down Teaching the Best Approach?**

Crystal Chan[R, G](1,2), Shawn Chua(2), Cheryl Madeira (3), Heather Shapiro(1).
(1)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3)Ontario Institute for Studies in Education, University of Toronto.

P-C6 **Knowledge about H1N1 Influenza and the Vaccine Impacts Vaccination Uptake among Pregnant Women**

Shannon E. Moore [R](1), Kellie E. Murphy (2), Leanne R. De Souza (3), Allison J. McGeer (4) and Mark H. Yudin (3)
(1) Department of Obstetrics & Gynaecology, University of Toronto (2) Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3) Department of Obstetrics & Gynaecology, St. Michael's Hospital, (4) Department of Microbiology, Mount Sinai Hospital

GROUP D:

Chairs/Judges: Drs Allan Covens and Joan Murphy
Judge: Dr Terence Colgan

P-D1 **Negative Modulation of TGF-ß Signaling in Ovarian Cancer Cells: A Role for Androgen and Veph1 (Work-in-Progress).**

Premalatha Shathasivam [G](1,2,3), A. Kollara(1,3), J. Wrana(1,4), and T. J. Brown(1,2,3).
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital; Departments of (2)Physiology, (3)Obstetrics and Gynaecology, and (4)Medical Genetics and Microbiology, University of Toronto.

P-D2 **Sustained Ovulation-Associated Inflammatory Signalling in Fallopian Tube Epithelium as a Predisposing Factor of Serous Carcinoma**.

Tomer Feigenberg [F] (1), Alicia Tone [PD] (1,2), Terrence Colgan (3), K. Joan Murphy (1), Lisa Allen (4), Ellen Greenblatt (2), Michele Farrugia (4), Elyse Levinsky (4), Jodi Shapiro (4), Carl Virtanen (5), Barry Rosen (1), and Theodore Brown (2). (1) Div. of Gynecologic Oncology Princess Margaret Hospital, (2) Div. of Reproductive Endocrinology & Infertility Mt. Sinai Hospital, (3) Gynecological Pathology & Cytopathology Mt. Sinai Hospital, (4) Dept of Obstetrics & Gynecology Mt. Sinai Hospital, (5) University Health Network Microarray Centre

P-D3 **Characterization of Bovine Oviductal Epithelial Cells in Culture and Response to Follicular Fluid Exposure (Work-in-Progress)**

Angela Lau [G](1-3), Alexandra Kollara (1, 2), Alicia Tone (1,2), Ellen M Greenblatt (1,2), W Allan King (4), Theodore J Brown (1-3).
(1) Samuel Lunenfeld Institute, Mount Sinai Hospital, (2) Department of Obstetrics and Gynecology, and (3) Department of Physiology, University of Toronto, and the (4) Department of Biomedical Science, University of Guelph Veterinary School.

P-D4 **Confirmatory Factor Analysis of The Sexual Adjustment and Body Image Scale in Women with a Diagnosis of Gynaecologic Cancer**

Marie Wegener [M](1), Sara Urowitz (2), Sarah E. Ferguson(1).
(1)Department of Gynecologic Oncology, Princess Margaret Hospital, (2)Department of Psychiatry, Princess Margaret Hospital.

P-D5 **Visual Inspection with Acetic Acid (VIA) in Rural Zimbabwe: Analysis of the Implementation of Cervical Cancer Screening**

Beth Cruickshank[R] (1), Barry Rosen(2), Paul Thistle(3).
(1)University of Toronto, Department of Obstetrics & Gynaecology (2) Gynaecology Oncology, Department of Obstetrics & Gynaecology (3) University of Zimbabwe, Department of Obstetrics & Gynaecology.

GROUP E:

Chairs/Judges: Drs Hani Akoury and Rose Kung
Judge: Dr Ori Nevo

P-E1 **Expression of Genes Regulating the Smooth Muscle Contraction in the Vaginal Tissue of Women with and without Pelvic Organ Prolapse**

Maria Bortolini (1-4), Oksana Shynlova (1), **Nadiya Oleksiv [O](1)**, Harold Drutz, MD(2,4), Stephen Lye (1,2,3), May Alarab (1,4).
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (2)Obstetrics and Gynaecology; (3)Physiology and (4)Urogynaecology, Mount Sinai Hospital, University of Toronto.

P-E2 **Pelvic Floor Dysfunction after an Anal Sphincter Tear during Childbirth**

David Baud[F](1), Sylvain Meyer (1), Yvan Vial (1), Patrick Hohlfeld (1), Chahin Achtari (1)
(1) Department of Obstetrics and Gynaecology, Lausanne, Switzerland

P-E3 **A Randomized Trial of the Uresta Continence Device: Short Term Uresta Efficacy Study ("Sure" Study) *(*Work-in-Progress*)***

Carolyn Best [F](1), Phaedra Diamond [F](1), May Alarab(1), Harold P. Drutz (1), Danny Lovatsis (1).
(1) Urogynecology Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital

P-E4 **The Prevalence of Detrusor Overactivity amongst Patients with Symptoms of Overactive Bladder: A Retrospective Cohort Study.**

Phaedra Diamond[F](1), Seham Hassonah[F](1), Harold Drutz(1).
(1)Urogynaecology Division, Department of Obstetrics and Gynaecology, Mount Sinai Hospital

P-E5 **Rate of Stress Urinary Incontinence in the Six Month Follow-Up in Patients Who Underwent Laparoscopic Sacrocolpopexy Surgery without Preoperative Symptoms or Diagnosis of Occult Stress Urinary Incontinenece, and No Concomitant SUI Surgery. (Work-in-Progress)**

Noushin Khoshbakht [R], Danny Lovatsis
Division of Urogynaecology, Department of Obstetrics & Gynaecology, Mount Sinai Hospital.

P-E6 **Predictors of Length of Hospital Stay after Vaginal Hysterectomy**

Mara Sobel [R], Stacey Grossman, Patricia Lee
Department of Obstetrics & Gynaecology, Division of Urogynaecology, Sunnybrook Hospital, Toronto, Ontario

GROUP F:

Chairs/Judges: Drs Elliot Lyons and May Alarab
Judge: Dr Anne Claessens

P-F1 **Does First Trimester Crown-Rump Length Predict Term Birthweight?**

Rinat Hackmon(F)(1, 2), Cliff Librach(3) Ilan Matok(4), Ian Cho(5), Nicole Rodrigues(5), Stephanie Grover(3), Joel Ray(1), Howard Berger(1)
(1)High-Risk Pregnancy Division, Department of Obstetrics & Gynaecology, St Michael's Hospital, (2)Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3) Departments of Obstetrics and Gynaecology, Sunnybrook Health Sciences Centre and Women's College Hospital, University of Toronto, (4) Division of Clinical Pharmacology and Toxicology, Hospital for Sick Children, (5) Faculty of Arts and Science, University of Toronto

P-F2 **A Descriptive Analysis of a Large Cohort of HIV-Positive Pregnant Women at One Canadian Urban Hospital**

Daniela Caprara [R](1), Rajiv Shah (2), Jay MacGillivray (2), Mark H. Yudin (2).
(1) Department of Obstetrics and Gynaecology, University of Toronto, (2) Department of Obstetrics and Gynaecology, St.Michael's Hospital.

P-F3 **Duration of Rupture of Membranes and Risk of Fetal Transmission of HIV in Optimally Managed HIV Positive Mothers: Experience at Two Academic Centres.**

Siobhan Mark [R](1), Kellie Murphy(2), Stan Read(3), Ari Bitnun(3), Mark Yudin (4).
(1)University of Toronto, Department of Obstetrics and Gynaecology, (2)Maternal-Fetal Medicine Division, Department of Obstetrics and Gynaecology, Mount Sinai Hospital, (3)Division of Infectious Disease, The Hospital for Sick Children, (4)Department of Obstetrics and Gynaecology, St.Michael's Hospital.

P-F4 **Characteristics and Surgical Success in Patients Presenting for Repair of Obstetric Fistula in Western Kenya: A Retrospective Case Series**

Lesley Hawkins [M] (1), Rachel Spitzer (2), Astrid Christoffersen-Deb (2,3) and Hillary Mabeya (3). (1) Faculty of Medicine and (2) Department of Obstetrics and Gynaecology, University of Toronto, Ontario, Canada; (3) Department of Reproductive Health, Moi University, Eldoret, Kenya

P-F5 **Acceptability and Feasibility of Point of Care HIV Testing on the Labour and Delivery Unit during Early Labour**

Salikah Iqbal, [R] (1) Mark Yudin, MD (2), Leanne De Souza (3)
(1)University of Toronto, (2) St Michael's Hospital, Obstetrics, Gynaecology and Reproductive Infectious Disease

ORAL SESSION II

11:10 am – 12:10 pm **Oral Session II** (4 presentations @15 minutes: 10 minute presentation + 5 minutes for questions) **(O6-O9)** (East Common Room)

Chair: Dr Robert Casper
Judges: Drs S Lee Adamson and Lilian Gien

11:10-11:25 **O6 Long-Term Self-Renewal of Human Embryonic Stem Cells on Human Embryonic Fibroblasts in Animal-Free Culture Conditions**

Mark Kibschull[PD](1), Maria Mileikovsky(2), Iacovos Michael(1), Andras Nagy(1,2), Stephen Lye(1,3,4)

11:25-11:40 **O7 Amphetamine Exposure and Birth Outcomes: A Systematic Review and Meta-Analyses**

Noor Niyar N. Ladhani[F](1), Prakesh S. Shah(2), Kellie Murphy(3)
(1)Department of Obstetrics and Gynaecology, University of Toronto, (2) Department of Paediatrics, Mount Sinai Hospital, Departments of Obstetrics and Gynaecology and Paediatrics, University of Toronto, Department of Health Policy, Management and Evaluation, University of Toronto; (3)Department of Obstetrics and Gynaecology, Mount Sinai Hospital.

11:40-11:55 **O8 Endometrial Cancer and Meat Consumption: A Case Cohort Study**

Luc van Lonkhuijzen [F](1,2) , Victoria A. Kirsh (2,3), Nancy Kreiger (2,3), and Thomas E. Rohan (4)
(1) Department of Gynecologic Oncology, University of Toronto (2) Dalla Lana School of Public Health, University of Toronto (3) Population Studies and Surveillance, Cancer Care Ontario (4) Department of Epidemiology and Population Health, Albert Einstein College of Medicine, Bronx, New York, U.S.

11:55-12:10 **O9 Transcriptomic and Proteomic Analysis of Uterine Fluid Aspirates: A Minimally Invasive Approach to Determining Markers of Human Endometrial Receptivity**

Crystal Chan[G][F](1,2), Carl Virtanen(3), Neil Winegarden(3), Terence Colgan(4), Theodore Brown(1,2), Ellen Greenblatt(1). (1)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3)Microarray Centre, University Health Network, (4)Department of Laboratory Medicine and Pathobiology, Mount Sinai Hospital.

12:15 – 1:15 p.m. **LUNCH** (Lower Gallery and Quad if weather cooperates; Music Room, 2nd Floor, if it does not)

ORAL SESSION III

1:20 – 2:35 p.m. **Oral Session III (O10-O14)** (5 presentations @15 minutes – 10 minute presentation + 5 minutes for questions) (East Common Room)

Chair/Judge: Dr Kellie Murphy
Judges: Drs Adrian Brown and Andrea Jurisicova

1:20-1:35 O10 **The Dynamic Life of Par6: A Team Effort**

Tharini Sivasubramaniyam [G](2,3), Julia Garcia (3), Andrea Tagliaferro (3), Isabella Caniggia (1,2,3)**.**(1) Departments of Obstetrics & Gynaecology and (2) Physiology, University of Toronto; (3) SLRI, Mount Sinai Hospital.

1:35-1:50 O11 **Three Dimensional Image Analysis of the Centromere of Chromosome 17 in Human Spermatozoa**

Naazish Alladin [O](1,2), Ayub Lulat(1), Sergey Moskovtsev(1,3); Clifford Librach(1,3, 4).
(1) CReATe Fertility Center; (2) Department of Biomedical Sciences, Eastern Virginia Medical School; (3) Department of Obstetrics & Gynaecology, University of Toronto; (4) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre.

1:50-2:05 O12 **Vascular Limb Occlusion in Severe Twin-To-Twin Transfusion Syndrome (TTTS)**

Susanne Schrey [F](1), Fawaz Alkazaleh (1), Kurt Hecher (2), Ruben Quintero (3), Kenneth Moise (4), John Allbert (5), Agnes Huber (2), Carol Schneider (6), GarethSeaward (1), Ian Suchet (7), Rory Windrim (1), Greg Ryan (1).

2:05-2:20 **O13 Murine Placental System A Expression: Development and Effects of Synthetic Glucocorticoid Treatment**

Melanie C. Audette[G](1), John R. G. Challis(1-5), Rebecca L. Jones(5), Colin P. Sibley(5), Stephen G Matthews(1-3).

2:20-2:35 **O14 Sex-Specific Basis of Severe Placental Dysfunction**

Melissa Walker[M](1), Brendan Fitzgerald(2), Sarah Keating(2), Rory Windrim(1), John Kingdom(1)**.**
(1)Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Department of Pathology & Laboratory Medicine, Mount Sinai Hospital, Toronto.

2:35– 4:05 p.m. **POSTER SESSION II**

2:35 – 3:05 p.m. **Coffee Break & Poster Session II Walkabout** (Lower Gallery and Great Hall)

3:05 – 4:05 p.m. **Poster Session II Tour** (3-5 minute presentation + 5 minutes for questions) (Great Hall)
Groups G-K

GROUP G:

Chairs/Judges: Drs Isabella Caniggia and Karen Glass
Judges: Dr Clifford Librach

P-G1 **Pathologic Basis of Echogenic Cystic Lesions in the Human Placenta: Role of Ultrasound-Guided Wire Localization**

Leslie K Proctor[M] (1), WL Whittle (2), S Keating (3), S Viero (3) and JCP Kingdom (2)
(1) Faculty of Medicine, (2) Maternal-Fetal Medicine Division, Department of Obstetrics & Gynecology, Mount Sinai Hospital, (3) Laboratory Medicine and Pathobiology, Mount Sinai Hospital, University of Toronto.

P-G2 **Pro-Inflammatory Cytokines Inhibit Multidrug Resistance in the Developing Blood-Brain Barrier**

Majid Iqbal[G](1), Hay Lam Ho(1), William Gibb (4,5), Stephen G. Matthews (1,2,3).
Departments of (1)Physiology, (2)Obstetrics and Gynaecology, and (3)Medicine, Faculty of Medicine, University of Toronto. Department of (4)Obstetrics and Gynecology and (5)Cellular and Molecular Medicine, University of Ottawa.

P-G3 **Role of Placental VEGFA in Maternal Function during Pregnancy**

Han Li[G](1)(2)(3), Dawei Qu(1), Hoonki Sung(1), Andras Nagy(1)(4) and S Lee Adamson, (1)(2)(3).
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital; (2)Physiology, University of Toronto; (3)Obstetrics and Gynecology, University of Toronto and (4)Molecular Genetics, University of Toronto.

P-G4 **Selective Serotonin Reuptake Inhibitors (SSRIs) Modify Drug Resistance in the Placenta and at the Fetal Blood-Brain Barrier**

Manzerul Bhuiyan[G](1), Sophie Petropoulos(1), William Gibb(4, 5), Stephen Matthews(1, 2, 3).
(1)Departments of Physiology, (2)Obstetrics and Gynaecology, and (3)Medicine, University of Toronto, (4)Departments of Obstetrics and Gynaecology, and (5) Cellular and Molecular Medicine, University of Ottawa, Ottawa.

P-G5 **Pregnancy Outcomes in Women with Elevated Levels of Fetal Hemoglobin**

Ally Murji [R](1), Mara Sobel(1), Lara Hasan(1), Anne McLeod(2), John Waye(3), Mathew Sermer(4), Howard Berger(5)
(1)Department of Obstetrics & Gynaecology, University of Toronto; (2)Department of Hematology, Mount Sinai Hospital; (3)Molecular Diagnostic Genetics, Hamilton Health Sciences, McMaster University; (4) Maternal-Fetal Medicine Division, Department of Obstetrics & Gynecology, Mount Sinai Hospital and (5) St Michael's Hospital.

GROUP H:

Chairs/Judges: Drs S Lee Adamson and Ian Rogers
Judge: Dr. John Kingdom

P-H1 **Mechanical Stretch Induces the Release of Pro-Inflammatory Cytokines in Human Myometrial Smooth Muscle Cells.**

Yu-Hui Lee[G](1), Oksana Shynolva(3), Stephen Lye(1,2,3).
Departments of (1)Physiology and (2)Obstetrics and Gynaecology, University of Toronto; (3)Samuel Lunenfeld Research Institute, Mount Sinai Hospital.

P-H2 **Characterization of Myometrial Cytokine Expression and Leukocyte Infiltration during Term and Preterm Labour**

Tamara Nedd-Roderique[G](1,2), Oksana Shynlova(1), Anna Dorogin(1) and Stephen Lye(1,2,3) (1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital; (2) Departments of Physiology, and (3) Obstetrics & Gynaecology, University of Toronto.

P-H3 **A Cytokine Signature Associated with the Onset of Term and Preterm Labour**

Oksana Shynlova [O](1), Sally Sabra (1,3), Stephen Lye(1,2,3)
(1) Samuel Lunenfeld Res Institute, Mt Sinai Hospital, (2) Departments of Physiology, and (3) Obstetrics/ Gynecology, University of Toronto

P-H4 **Immunophenotyping of Maternal Peripheral Blood Detects Activated Leukocyte Subpopulations Associated with Preterm Labour.**

Sally Sabra [F](1,2,4), Oksana Shynlova (1), Stephen Lye (1,2,3),
(1) Samuel Lunenfeld Res Inst, Mt Sinai Hospital, Department (2)of Ob/Gyn; (3) Physiology and (4) IMS, University of Toronto

P-H5 **The Modulation of Androgen Signaling by Steroid Hormones and Mechanical Stretch: A Novel Pathway of Labour Initiation**

Yunqing Li[G](1, 2), Oksana Shynlova(1), Xuesen Dong(4) and Stephen J Lye(1,2,3)
(1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (2) Department of Physiology, University of Toronto, (3) Department of Obs&Gyn, University of Toronto and (4) Prostate Center, University of British Columbia.

P-H6 **Preterm Premature Rupture of Membranes: What is the Effect of Latency on Neonatal Outcome? (Work-in-Progress)**

Julia Kfouri [R](1), Wendy Whittle (2), Shoo Lee (3), Matthew Laskin (4)
(1)University of Toronto, (2)Department of Obstetrics and Gynaecology, University of Toronto, (3)Department of Pediatrics, Mount Sinai Hospital, (4)University of Toronto

GROUP I:

Chairs/Judges: Drs Michelle Letarte and Ellen Greenblatt
Judge: Dr Navid Esfandiari

P-I1 **Don't Throw that Umbilical Cord Away!!: Umbilical Cord Blood Stem Cells in Regenerative Medicine**

Shawn Chua [PD], Jennifer Whiteley, Mira Li BSc, Ryszard Bielecki DVM, Ian Rogers.
Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital

P-I2 **Characterization of First-Term Human Umbilical Cord-Derived Perivascular Stem Cells**

Seok-Ho Hong*(1), **Anouk-Martine Teichert*[O](1)**, Andree Gauthier-Fisher(1), Shlomit Kenigsberg(1) and Clifford L. Librach(1,2)
(1) CReATe Fertility Centre, Toronto ON Canada ,(2) Department of Obstetrics and Gynecology, University of Toronto, Division of Reproductive Endocrinology and Infertility, Departments of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre and Women's College Hospital.

P-I3

Effect of Sperm DNA Damage on the Functional Ability of Spermatozoa to Penetrate Cervical Mucus

Saajida Bhorat [O](1,2); Naazish Alladin (1, 3), German Videna (1), Ayub Lulat (1), Clifford L. Librach (1, 4, 5); Sergey I. Moskovtsev (1, 5).
(1) CReATe Fertility Center, Toronto, Ontario; (2) Department of Biochemistry, University of Waterloo; (3) Department of Biomedical Sciences, Eastern Virginia Medical School; (4) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre; (5) Department of Obstetrics & Gynaecology, University of Toronto.

P-I4

Expression of a Sperm-Originated Oocyte Activating Factor in Ejaculates of Men Undergoing Fertility Evaluation

Mahmoud Aarabi [O](1); Naazish Alladin (2, 3); Sergey I. Moskovtsev (2, 4); Shlomit Kenigsberg (2); Richard J. Oko (1); Clifford L. Librach (2, 4, 5).
(1) Research Group for Reproduction, Development and Sexual Function, Queen's University; (2) CReATe Fertility Center; (3) Department of Biomedical Sciences, Eastern Virginia Medical School; (4) Department of Obstetrics & Gynaecology, University of Toronto; (5) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre.

P-I5

Starvation-Induced Autophagy in Murine Oocytes

Tetyana Yavorska [G](1,2), Andrea Jurisicova (1,2,3).
(1)Department of Physiology, University of Toronto, Canada, (2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada, (3) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, University of Toronto.

P-I6

Is There a Correlation Between Sperm DNA Damage (DFI) and a Sperm Kinetic Index (MPI), and Do These Tests Predict Pregnancy Outcome in Couples Undergoing Intrauterine Insemination (IUI)?

Shir Dar [F](1), Naazish Alladin(1), Stephanie Grover, Sergey I. Moskovtsev(1,2), Clifford L Librach(1, 3)
(1)CReATe Fertility Center; (2)Department of Obstetrics & Gynaecology, University of Toronto; (3)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Sunnybrook Health Sciences Centre.

GROUP J:

Chairs/Judges: Drs Christine Derzko and Paul Bernstein
Judge: Dr Richard Pittini

P-J1 **Termination of Pregnancy for Fetal Anomalies (Work-in-Progress)**

Jing Qin[R](1), Michèle Farrugia(2), Elyse Lackie(3)**.**
(1)Department of Obstetrics and Gynaecology, University of Toronto, (2)Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3)Department of Obstetrics & Gynaecology, North York General Hospital.

P-J2 **Conservative Management of Cervical Ectopic Pregnancy**

Kimberley Garbedian [F], Barbara Cruickshank
Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Mount Sinai Hospital.

P-J3 **Moved to E6**

P-J4 **Fertility Treatment Decision-Making: The Effect of Insurance Coverage for Fertility Medications**

Claire Jones[R](1), Kimberly Liu(2).
(1) Obstetrics and Gynaecology, University of Toronto, (2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Mount Sinai Hospital

P-J5 **Utilization of Molecular Testing to Determine the Optimal Sampling Strategy for the Detection of Urogenital C. Trachomatis and N. Gonorrhoeae in Adolescent Females**

Tania Dumont[F](1), Kaede Ota(2), Susan Richardson(3), Erin Barlow(4), Trisha Tulloch(5), Catherine Maser(6), Debra Katzman(6), Yvonne Yau(3), Lisa Allen(4)
Hospital for Sick Children; (2) Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; (3) Division of Microbiology, Hospital for Sick Children;(4) Section of Gynaecology, Division of Endocrinology, Hospital for Sick Children; (5) Adolescent Medicine, Hospital for Sick Children; (6) Division of Adolescent Medicine, Hospital for Sick Children.

P-J6 **Cultural Barriers to Fertility Treatment in the Toronto Chinese Community**

Ingrid Lai[M](1), Samantha Yee(2,3), and Ellen Greenblatt(3)
(1)Faculty of Medicine, University of Toronto; (2)Faculty of Social Work, University of Toronto; (3)Centre for Fertility and Reproductive Health.

GROUP K:

Chairs/Judges: Drs Kellie Murphy and Theodore J Brown
Judge: Dr Cynthia Maxwell

P-K1 **Chronic Maternal Adversity Modifies Activity and Attention Behaviours in Juvenile Guinea Pig Offspring: Dopaminergic Modulation**

Jeff Emack(G)(1) and Stephen Matthews(1,2,3)
Departments of (1)Physiology, (2)Obstetrics and Gynaecology, and (3)Medicine, Faculty of Medicine, University of Toronto.

P-K2 **Effects of Prenatal Synthetic Glucocorticoid Treatment on Locomotor Activity and Attention**

Vasilis Moisiadis[G](1), Alisa Kostaki(1), Stephen G. Matthews(1,2,3).
(1)Departments of Physiology, (2)Obstetrics and Gynaecology and (3)Medicine, Faculty of Medicine, University of Toronto.

P-K3 **Serum HCG as a Predictor of Pregnancy Outcome in IVF and ICSI Cycles**

Dora Chan [R](1), Ellen Greenblatt (2).
(1) Department of Obstetrics & Gynaecology, University of Toronto, (2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Mount Sinai Hospital.

P-K4 **The Role of Cephalocentesis in the Management of the Severely Hydrocephalic Fetus**

Erica Howse (F)(1), TG Teoh (3), E Kelly (1), D Chitayat (1), PJ McParland (2), G Ryan(1).
(1)Department of Obstetrics and Gynaecology, Division of Maternal Fetal Medicine – Fetal Medicine Unit, Mount Sinai Hospital; University of Toronto; (2)Department of Fetal Medicine, National Maternity Hospital, Dublin, Ireland; (3)Department of Obstetrics and Gynaecology, St. Mary's Hospital, London, UK.

P-K5 **Antenatal Dietary Restriction Impairs Fetal Metabolism and is Improved by a Diet Enriched in Omega-3 Fatty Acids**

Lauren A Chun[G](1,2), Stephen Lye(1,2,3).
(1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Departments of (2) Physiology and (3) Obstetrics & Gynaecology, University of Toronto

4:05 – 4:20 p.m. **Poster Takedown** (Great Hall)

4:30 – 5:30 p.m. **Henderson Lecture** (Music Room)

Dr. Philip Castle, Executive Director, American Society of Clinical Pathology (ASCP) Institute
Topic: Separating the Wheat from the Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer

Closing Remarks: Dr. Alan Bocking (Music Room)

5:30 – 6:30 p.m. **Wine and Cheese Reception** and **Papsin** and **JW Knox Ritchie Research Awards Presentations** (South Dining Room)

THE HENDERSON LECTURE

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.

Dr Philip Castle

We are very pleased to have Dr. Philip Castle as our 2011 Henderson Lecturer. Dr. Castle is the first Executive Director of the American Society of Clinical Pathology (ASCP) Institute, as of March 1, 2011, and was previously a Senior Tenured Investigator with the U.S. National Cancer Institute. His training includes a Ph.D. in Biophysics and an M.P.H. in Epidemiology from Johns Hopkins University, as well as a post-doctoral fellowship at the NIH on the molecular biology of the zona pellucida, and a Cancer Prevention Fellowship at NCI. His interests include HPV, cervical/anogenital cancer, cancer prevention strategies, evidence-based medicine, and international health. Dr. Castle has published over 200 articles, is a lead researcher in a number of epidemiologic studies, and speaks and advises internationally. Dr. Castle has received the EUROGIN Distinguished Service Award, the NIH Merit Award, and the highest honour of the ASCCP, the Distinguished Scientific Achievement Award.

Previous Henderson lecturers and topics:

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?

AWARDS

The Papsin Award

The Dr. Frederick R. Papsin Postgraduate Award was inaugurated in 2003 in memory of Dr. Frederick R Papsin, Chief of the Department of Obstetrics and Gynaecology at Mount Sinai Hospital from 1971 to 1988. The award is presented to a postgraduate resident in the final year of training, and is based on teaching ability, mentorship activities and leadership, as chosen by the winner's peers. There have been six recipients, Dr. Andrea Lausman (2005), Dr. Kerry Myckan (2006), Dr. Matthew Morton (2007), Dr. Shereen Chirayilkalam (2008), Dr. Lynne Zolis (2009), and Dr. Rebecca Cash (2010).

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).

Previous recipients of the JW Knox Ritchie Research Awards:

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)

ORAL ABSTRACTS

ABSTRACT #O1

Management of Abnormal Cervical Cytology Screening in Adolescents and Young Women: A Descriptive Analysis

Geneviève Bouchard-Fortier[R](1), Lawrence Paszat(2), Joan Murphy(1,3)**.**
(1) Department of Obstetrics & Gynaecology, University of Toronto (2) Senior scientist ICES, Associate Professor HPME and Dalla Lana School of Public Health, University of Toronto (3) Department of Gynecologic Oncology, Princess Margaret Hospital.

Objective: To describe and analyze the management of young women referred for colposcopy at a high volume colposcopy centre for evaluation of atypical squamous cells of undetermined significance (ASCUS) or low-grade squamous intraepithelial lesion (LSIL).

Methods: We conducted a retrospective descriptive study by searching the eCancerCare Colposcopy Database at our center for patients age 15 to 29 with referral cytology of ASCUS and LSIL from January 2000 to October 2009. Three age cohorts (15-19, 20-24, 25-29) were characterized looking at risk factors, relevant medical history, human papillomavirus (HPV) results when available, cytology and histology results, treatment and follow-up. In the context of another study, HPV test was performed in many of our patients.

Results: We identified 415 patients. Among patients tested for HPV at initial visit, the test was positive in 7/9 (77%) patients aged 15-19, 39/58 (67%) aged 20-24, and 47/61 (77%) aged 25-29. Between ages 15 to 19, 13/36 patients (36%) were treated (3/13 normal histology, 6/13 LSIL, 4/13 HSIL). Between ages 20 to 24, 74/178 (42%) were treated (1/74 microinvasive carcinoma, 30/74 (41%) HSIL, and 37/74 (50%) LSIL). Between ages 25 to 29, 88/201 (44%) were treated (47/ 88 (53%) HSIL, 33/88 (38%) LSIL). Diagnostic or therapeutic loop electrosurgical excision procedure (LEEP) was performed for 142/175 (81%) of treated patients.

Conclusions: Our data illustrates the challenges of distinguishing progressive from transient lesions in this population. HPV testing was frequently positive in these young women and not helpful in identifying progressive lesions.

ABSTRACT #O2

Prevalence of Renal Anomalies in Women with Mullerian Duct Anomalies Diagnosed by 3d Sonohysterography

Beth Gunn[R](1), Alex Hartman(2), Joel RK Moody(3), Heather Shapiro(1).
(1)Centre for Fertility and Reproductive Health, Department of Obstetrics &Gynecology, Mount Sinai Hospital, (2)True North Imaging, (3)Prosserman Centre for Health Research, Samuel Lunenfeld Research Institute, Mount Sinai Hospital.

Objective: Mullerian Duct Anomalies (MDAs) are reported to be associated with up to a 30% prevalence of coexistent renal anomaly. This may not reflect the true association, if the historical prevalence of MDAs was under reported due to technical limitations of early diagnostic modalities which may overlook more minor fundal defects. We hypothesize that when 3D sonohysterography (3D SHG) is used, the prevalence of MDAs is higher and the true coexistence with renal anomalies is lower.

Methods: 1227 women seen in an outpatient facility for investigation of infertility were assessed by 3D SHG and abdominal ultrasound between January 1 and August 31 2010. Presence of MDA and coexistent abnormalities of the genitourinary system were documented. MDAs were classified based on ASRM criteria. Descriptive analyses, test of proportions and chi squared analysis were conducted.

Results: MDAs were noted in 324 (26.4%) patients. 71.6% (n=232) were arcuate and 28.4% were other MDAs: 68 septate, 11 unicornuate 8 didelphys and 5 bicornuate. Coexistent renal abnormalities were noted in 7.6% of those with MDAs excluding arcuate defects. Of patients with an arcuate defect, 0.4% (1/232) had a renal anomaly. The most common renal defect was unilateral renal agenesis, which was most often noted in those with a bicornuate uterus (2/5). Coexistent renal anomalies were found 4.4% and 16.6% of the time in patients with septate and all other MDA categories (excluding arcuates) respectively. None of the 903 patients with a normal cavity had a renal abnormality.

Conclusions: When 3D SHG is used, the prevalence of MDAs is higher and the true coexistence with renal anomalies is lower. There is a 7.6% prevalence of coexistent renal anomalies with MDAs excluding arcuates. This is significantly less than the reported literature ($p<0.05$). They are more common in patients with more extreme MDAs (0.4% arcuate, 4.4% septate, 16.6%(bicornuate, unicornuate, didelphys).The use of 3D SHG increases the pickup of minor cavity defects but may not increase the pickup of major MDAs. Arcuate fundal defects are rarely (0.4%) associated with renal anomalies. This may reflect a different pathogenesis and/or a variant of normal.

ABSTRACT #O3

The Effect of *Lactobacillus Rhamnosus* Gr-1 on Amnion Cytokine and Chemokine Production

Rebecca Koscik [G] (1,2), Wei Li (2), Andrew Martins (3), Sun O Kim (3), Gregor Reid (3), John RG Challis (1), Alan D Bocking (1,2).
(1) Departments of Physiology and Obstetrics and Gynecology, University of Toronto, (2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3) Department of Microbiology and Immunology, Siebens-Drake Research Center, and the Canadian Research and Development Center for Probiotics, University of Western Ontario

Objective: To determine the effects of *Lactobacillus rhamnosus* GR-1 (GR-1) supernatant on lipopolysaccharide (LPS) and lipoteichoic acid (LTA) on stimulation of cytokine and chemokine output by human amnion cells.

Methods: Placentae were collected from women undergoing elective cesarean section showing no signs of labour or clinical infection at Mount Sinai Hospital (Toronto, Ontario). The amnion was stripped and digested in 0.1% trypsin and 1% collagenase. Cells were plated until confluency was reached and serum starved followed by incubation with GR-1 supernatant for 12 hours. Cells were stimulated with either LTA or LPS and sampled after 12 hours. There were 6 treatment groups: control, GR-1, LTA, GR-1+LTA, LPS, GR-1+LPS. Culture medium was collected and analyzed using ELISA and Bioplex Assays.

Results: Interleukin (IL)-6 increased in all groups ($n=13$, $p<0.05$) compared to control: GR-1 (1.82 fold), LTA (2.38 fold), GR-1+LTA (2.22 fold), LPS (2.47 fold), GR-1+LPS (2.61 fold). IL-8 was increased in all groups ($n=13$, $p<0.05$) compared to control: GR-1 (10.87 fold), LTA (8.32 fold), GR-1+LTA (13.18 fold), LPS (3.74 ng/ml), GR-1+LPS (9.84 fold). Tumor necrosis factor (TNF)-α was increased with LPS (368.34 pg/ml) and LTA (103.93 pg/ml) compared to control (below detectable limits, 4pg/ml) and was inhibited with GR-1: GR-1+LTA (19.90 pg/ml), GR-1+LPS (69.10 pg/ml).

Conclusions: In the human amnion, GR-1 promotes a strong chemotactic response while potentially stimulating immune cell activation. In addition, GR-1 downregulates pro-inflammatory cytokine production by LTA and LPS potentially preventing activation of downstream inflammatory pathways.

Funded by: This study was funded by the Canadian Institute for Health Research MOP 82799.

ABSTRACT #O4

The Role of Peroxisome Proliferator Activated Receptor Gamma in Normal Rodent Pregnancy and an Animal Model of Preeclampsia.

Fergus P McCarthy [PD](1,2), Sascha Drewlo (1), Dora Baczyk (1), John Kingdom (1), Edward J Johns (2), Sarah K Walsh (2), Louise C Kenny (2)
(1) Samuel Lunenfeld Research Institute & Department of Obstetrics and Gynaecology, Mount Sinai Hospital, University of Toronto, **(2)** Department of Obstetrics and Gynaecology & Anu Research Centre, University College Cork, Cork, Ireland.

Objectives: Severe preeclampsia is a reversible systemic vasculopathy mediated in part by placenta-derived anti-angiogenic growth factors including sFlt1 secreted by an abnormally-differentiated villous trophoblast compartment. Syncytiotrophoblast differentiation is regulated by peroxisome proliferator activated receptor gamma (PPAR-γ) upstream of Gcm1 (Baczyk et al. CDD 2009). We tested the hypothesis that pharmacologic inhibition of PPAR-γ in pregnant rats induces multi-system features of preeclampsia and whether features of the reduced utero-placental perfusion (RUPP) animal model of preeclampsia can be suppressed via the PPAR-γ agonist rosiglitazone.
Methods: Using an intra-peritoneal mini-osmotic pump, healthy pregnant rats were administered either vehicle or the PPAR-γ antagonist, T0070907. In parallel, rosiglitazone was administered to pregnant rats with surgically induced preeclampsia (RUPP rats). Since PPAR-γ agonists up-regulate heme oxygenase 1 (HO-1), we explored the temporal role of HO-1 in mediating the beneficial effects of rosiglitazone by administering rosiglitazone in either the absence or presence of the HO-1 inhibitor, SnPP.
Results: Rats treated with T0070907 developed key features of preeclampsia including hypertension, proteinuria, endothelial dysfunction, reduced pup weight and increased platelet aggregation. Pregnant rats administered T0070907, had reduced plasma vascular endothelial growth factor (VEGF) and increased plasma sFlt-1. Increases in total placental sFlt-1 mRNA and Flt-1 protein were also demonstrated, suggesting the placenta as the main contributor to the increased circulating levels of sFlt-1. The labyrinthine (villous equivalent) trophoblast in the placentas of T0070907 treated rats were less differentiated, had increased cellular proliferation and were strongly immuno-positive for CD-31 staining indicating adaptive angiogenesis. Administration of the PPAR-γ agonist, rosiglitazone ameliorated hypertension, vascular dysfunction and platelet aggregation in RUPP rats, effects which were abrogated in the presence of the HO-1 inhibitor. Administration of rosiglitazone also ameliorated abnormally elevated microalbumin creatinine ratios, another marker of endothelial dysfunction.
Conclusion: PPAR-γ plays a pivotal role in the development of a healthy pregnancy via trophoblast differentiation. Our data illustrate a novel pharmacologic pathway, via augmentation of PPAR-γ, as a potential therapeutic target in the secondary prevention or early treatment of severe preeclampsia.

Funded by: Molecular Medicine Ireland and CIHR (to JK)

ABSTRACT #O5

Body Mass Index (BMI) Effect on Induction of Labor (IOL) Outcome

Shay Porat [F], Cynthia Maxwell, Mathew Sermer and Dan Farine
Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, University of Toronto.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #O6

Long-Term Self-Renewal of Human Embryonic Stem Cells on Human Embryonic Fibroblasts in Animal-Free Culture Conditions

Mark Kibschull[PD](1), Maria Mileikovsky(2), Iacovos Michael(1), Andras Nagy(1,2), Stephen Lye(1,3,4)

(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Departments of (2)Molecular Genetics, (3)Physiology, (4)Obstetrics and Gynecology, University of Toronto.

Objective: The future application of human embryonic stem cells (hESC) for therapeutic approaches requires the development of animal-(xeno)-free culture conditions to prevent the potential transmission of animal pathogens or xenobiotic substances to hESC. A critical factor for hESC cultures is the source of human fibroblasts serving as feeders. Here, we investigated whether the use of human embryonic fibroblasts - serving as feeder cells for hESC - improves animal-free culture conditions, and overcomes problems associated with human foreskin fibroblast feeders.

Methods: Two human embryonic fibroblast lines were established under animal-free conditions. The hESC lines CA1 and CA2 were cultured in parallel on both embryonic fibroblast feeders and, in comparison, on foreskin fibroblast feeders. A commercially available complete animal-free, defined culture medium was used together with animal-free dissociation enzymes for passaging of cells. The ROCK inhibitor Y-27632 was applied to the medium to prevent differentiation of hESC cells during single cell passaging. hESC cultures were analyzed for growth, morphology, marker expression and karyotype over >38 passages.

Results: We show that human embryonic fibroblasts support long-term self-renewal and undifferentiated growth of hESC in animal-free culture conditions using single-cell passaging. Pluripotency of hESCs was maintained after long-term culture indicated by specific stem cell marker expression (Oct4, Sox2, SSEA-4, TRA-1-60, alkaline phosphatase) and teratoma formation assays revealed normal differentiation capacities. Importantly, our culture system allows enzymatic passaging of hESC. In contrast, hESC cultured on human foreskin fibroblasts were poorly maintained and subject to differentiation.

Conclusions: Our study clearly shows that the source of human fibroblasts is essential for long-term hESC maintenance, with fibroblasts derived from human embryos providing a significant improvement, allowing single cell passaging of hESC in completely animal-free culture conditions.

Funded by: The Canadian Stem Cell Network

ABSTRACT #O7

Amphetamine Exposure and Birth Outcomes: A Systematic Review and Meta-Analyses

Noor Niyar N. Ladhani[F](1), Prakesh S. Shah(2), Kellie Murphy(3)
(1)Department of Obstetrics and Gynaecology, University of Toronto, (2) Department of Paediatrics, Mount Sinai Hospital, Departments of Obstetrics and Gynaecology and Paediatrics, University of Toronto, Department of Health Policy, Management and Evaluation, University of Toronto; (3)Department of Obstetrics and Gynaecology, Mount Sinai Hospital.

Objective: To systematically review the relationship between amphetamine use during pregnancy and birth outcomes including preterm birth (PTB), low birth weight (LBW) and small for gestational age (SGA) births.

Methods: A comprehensive search of electronic databases was performed to identify relevant studies. The MOOSE criteria were used and quality assessments of all studies were performed. Unadjusted data from included studies were extracted by two reviewers. Meta-analyses on the results of these studies, using the random effects model, were performed to calculate summary odds ratio (OR) and confidence intervals (CI).

Results: Eight studies providing unadjusted estimates were included. Observational studies with unmatched and matched controls were used. The settings of these studies were tertiary care centres in a variety of geographic settings. Significant increases in unadjusted risks of PTB (odds ratio [OR] 3.51, 95% confidence interval [CI] 2.53, 4.87), LBW (OR 3.97, 95% CI 2.45, 6.43), and SGA births (OR 6.14, 95% CI 1.73, 21.79) were identified among women who used amphetamines in pregnancy. The mean birth weight was also found to be significantly lower among amphetamine-exposed pregnancies (mean difference -279g, 95% CI -484.7,-73.5). Sensitivity analyses were performed confirming an increase in the unadjusted risks of LBW, PTB, and SGA in all subgroups analyzed.

Conclusions: Amphetamine use in pregnancy may be associated with adverse birth outcomes. As global rates of amphetamine use increases, physicians should inquire about amphetamine exposure in pregnancy and encourage cessation to prevent these adverse outcomes. As well, our knowledge of the effects associated with amphetamine exposure needs to be expanded with further research and studies of adjusted outcomes.

ABSTRACT #O8

Endometrial Cancer and Meat Consumption: A Case Cohort Study

Luc van Lonkhuijzen [F](1,2) , Victoria A. Kirsh (2,3), Nancy Kreiger (2,3), and Thomas E. Rohan (4)
(1) Department of Gynecologic Oncology, University of Toronto (2) Dalla Lana School of Public Health, University of Toronto (3) Population Studies and Surveillance, Cancer Care Ontario (4) Department of Epidemiology and Population Health, Albert Einstein College of Medicine, Bronx, New York, U.S.

Objective: Diet plays an important role in the aetiology of certain cancers, but there is limited evidence regarding the association between diet and risk of endometrial cancer. Few prospective studies have investigated meat intake as a potential determinant of endometrial cancer risk. We sought to examine the association between endometrial cancer risk and total meat, red meat, processed meat, fish and poultry intake.

Methods: We conducted a case-cohort analysis within the Canadian Study of Diet, Lifestyle and Health, a prospective cohort of 73,909 adults (39,614 women). Case cohort analysis is a modern analysis technique which offers several advantages. Participants were recruited from 1992 to 1999, predominantly from three Canadian universities including the University of Toronto. All participants completed a life style and a food frequency questionnaire with 166 food items. We conducted a linkage with the Ontario Cancer Registry for the years 1992 to 2007 for the female cohort members who resided in Ontario at enrolment (n=26,024) to yield data on cancer incidence. The analytic sample comprised 107 incident cases and 1,830 subcohort members, the latter being an age-stratified sample of the full cohort. The association between meat consumption and risk of endometrial cancer was examined using Cox regression models modified for a case-cohort approach.

Results: A non-significant increase in risk of endometrial cancer was associated with increased consumption of red meat (HR = 1.62, 95%CI = 0.86 to 3.08, for high versus low intake; P_{trend}= 0.13), processed meat (HR = 1.45, 95%CI = 0.80 to 2.61, for high versus low intake; P_{trend}= 0.058) and all meat combined (HR = 1.50, 95%CI = 0.78 to 2.89, for high versus low intake; P_{trend}=0 .14). No clear patterns were noted for poultry or fish.

Conclusions: The results of our study, although based on a limited number of cases, suggest that relatively high meat intake may be associated with increased risk of endometrial cancer.

ABSTRACT #O9

Transcriptomic And Proteomic Analysis Of Uterine Fluid Aspirates: A Minimally Invasive Approach To Determining Markers Of Human Endometrial Receptivity

Crystal Chan[G][F](1,2), Carl Virtanen(3), Neil Winegarden(3), Terence Colgan(4), Theodore Brown(1,2), Ellen Greenblatt(1). (1)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3)Microarray Centre, University Health Network, (4)Department of Laboratory Medicine and Pathobiology, Mount Sinai Hospital.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #O10

The Dynamic Life Of Par6: A Team Effort

Tharini Sivasubramaniyam [G](2,3), Julia Garcia (3), Andrea Tagliaferro (3), Isabella Caniggia (1,2,3)**.**(1) Departments of Obstetrics & Gynaecology and (2) Physiology, University of Toronto; (3) SLRI, Mount Sinai Hospital.

Objective: Proper human placental development is dependent upon tightly-regulated cellular differentiation events including trophoblast cell fusion and invasion. Notably, cell polarity plays an important role in cell differentiation shaping proper organogenesis via the generation of cell diversity and the execution of specific cellular functions. A key regulator of cell polarity, Par6 (Partitioning defective protein 6) has been recently shown to play a role in loss of cell polarity through its involvement in the TGFβ Smad-independent signaling pathway. Accordingly, this study examines the contribution of Par6 in regulating trophoblast differentiation events in normal and pathological placentae.

Methods: The temporal and spatial expression of Par6 was examined throughout placental development and in; preeclamptic (PE) and age-matched control placentae (AMC) by Western Blot and immunofluorescence analyses. To establish a role for Par6 in regulating trophoblast cell fusion loss (siRNA Par6 strategy) and gain of function (Par6 overexpression) studies were performed using choriocarcinoma BeWo cells and expression of fusogenic marker syncytin and tight junction protein, ZO-1 were assessed. In addition, Par6 expression was assessed following forskolin treatment, a known inducer of trophoblast fusion. To establish a role for Par6 in trophoblast migration, the expression of Par6 was assessed following wound healing assay in JEG3 choriocarcinoma cells. Lastly, we examined the role of TGFβ and its signaling in regulating Par6 expression in JEG-3 cells.

Results: During early gestation Par6 expression exhibited a unique spatial and temporal pattern of expression as it switched its subcellular localization with advancing gestation. Furthermore, Par6 expression was also detected in EVT forming the distal end of the anchoring column. Western Blot analysis showed a peak of Par6 expression at 10-15 weeks of gestation coinciding with increased association with Smurf1. Following forskolin treatment of BeWo cells, Par6 expression decreased and this associated with a loss of ZO-1 from tight junctions. In conjunction, silencing of Par6 in BeWo cells disrupted ZO-1 localization from the cell boundaries. Overexpression of Par6 in BeWo cells led to inhibition of trophoblast cell fusion. In addition, using wound healing assay, Par6 expression localized to the migrating JEG3 cells. Interestingly, treatment of JEG3 cells with TGFβ3 increased Par6 expression and this was associated with decreased RhoA expression. Of clinical significance, Par6 protein expression levels were increased in PE placentae predominantly in the trophoblast layer and this was associated with increased maintenance of ZO-1 to cell boundaries.

Conclusions: Our data demonstrate that Par6 is multitasking as it exhibits dynamic and distinct roles in regulating trophoblast fusion and migration. Moreover, our data suggest that changes in Par6 may contribute to the altered trophoblast fusion and shallow invasion reported in preeclampsia.

Funded by: CIHR

ABSTRACT #O11

Three Dimensional Image Analysis of the Centromere of Chromosome 17 in Human Spermatozoa

Naazish Alladin [O](1,2), Ayub Lulat(1), Sergey Moskovtsev(1,3); Clifford Librach(1,3, 4).
(1) CReATe Fertility Center; (2) Department of Biomedical Sciences, Eastern Virginia Medical School; (3) Department of Obstetrics & Gynaecology, University of Toronto; (4) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre.

Objective: Human spermatozoa have a unique, well organized nuclear architecture that differs from somatic cells. While the higher chromatin organization is not well understood, it is likely that improperly packaged sperm chromatin will disrupt the structured sequence of fertilization. Part of the higher chromatin organization is the presence of a chromocenter in human spermatozoa formed by interaction of the centromeres of non-homologous chromosomes; it is not known if all chromosomes are equally involved in this formation. Most published studies evaluating somatic cells have been conducted by utilizing two dimensional imaging, which provides only limited information about nuclear structure. The evaluation of nuclear organization in spermatozoa is difficult due to the compactness of chromatin and the absolute necessity for chromatin decondensation. The purpose of our study was to evaluate chromocenter formation in mature human spermatozoa using 3-D digital image morphometry and image analysis.
Methods: Fluorescent in-situ hybridization (FISH) was used on mildly decondensed (with 0.5 N NaOH) spermatozoa. We performed direct double labelling using an alpha-satellite chromosome 17 centromere specific probe in combination with a pan-centromeric probe that targets all alphoid centromeres. The spermatozoa's tail attachment point was used as the reference to localize the intra-nuclear position of chromosome 17's centromere in either the anterior, medial or posterior regions of the nucleus. The 3-D analysis was performed on 141 spermatozoa using the IMARIS 3-D image analysis system. The volume of sperm nucleus, centromere of chromosome 17 and total chromocentre were calculated along with the intra-nuclear position of chromosome 17's centromere. Statistical analysis was performed using SPSS software.
Results: The mean spermatozoa head volume was 80.29 ± 18.22 um^3 and the volume occupied by the chromocenter was 1.91 ± 1.15 um^3. The signal for cetromere 17 was 0.435 ± 0.33um^3. The chromocenter occupied approximately 3% of sperm nuclei in interface spermatozoa. The mean distance between chromosome 17 and the tail attachment point was 3.99 ± 1.17 um. Observational data showed that 90% of the time the centromere of chromosome 17 was found in the medial region of the sperm head and was directly involved in forming the chromocenter.
Conclusion: Our data indicates that 3-D image analysis is fissile in partially decondensed human spermatozoa. It can be concluded that centromere of chromosome 17 has a preferred intra-nuclear localization in the medial region of the sperm head. We were able to calculate the chromocenter volume and identify that chromosome 17 is directly involved in the formation of chromocenters in mature human spermatozoa. Our results provide important information, which has never been reported, towards a fundamental understanding of the nuclear architecture of mature human spermatozoa.

ABSTRACT #O12

Vascular Limb Occlusion in Severe Twin-To-Twin Transfusion Syndrome (TTTS)

Susanne Schrey [F](1), Fawaz Alkazaleh (1), Kurt Hecher (2), Ruben Quintero (3), Kenneth Moise (4), John Allbert (5), Agnes Huber (2), Carol Schneider (6), GarethSeaward (1), Ian Suchet (7), Rory Windrim (1), Greg Ryan (1).

(1) Mount Sinai Hospital, Toronto, Ontario (2), University Clinic Eppendorf, Hamburg, (3) Florida Institute for Fetal Diagnosis and Therapy, Tampa, Florida (4) University of North Carolina at Chapel Hill, Obstetrics/Gynecology, Chapel Hill, North Carolina (5) Carolinas Medical Center, Charlotte, North Carolina (6) University of Manitoba, Winnipeg, (7) Regina General Hospital, Regina, Saskatchewan

Objective: To evaluate the phenomenon of vascular limb occlusion in severe twin-to-twin transfusion syndrome (TTTS)

Methods: Multi-centre retrospective review of cases of limb necrosis found in association with severe TTTS

Results: 18 cases of limb necrosis in association with severe TTTS were identified from 8 fetal medicine centers. Mean gestational age at diagnosis of TTTS was 21.5 wks (16-26) and at delivery was 29.4 wks (20 - 35.8). 16 of the 18 cases received treatment (9 laser and amnioreduction, 7 only amnioreduction). In the two untreated cases one and two fetuses were already dead when the patient presented for treatment. Of the 9 cases treated with laser, limb injury was already present in 5 cases at time of fetoscopy/laser. 17 recipient twins were affected and one donor. Lower limbs were affected more often than upper (15 versus 3), and right more than left (12 versus 5, one bilateral). The extent of the damage correlated with severity of TTTS: Of the six cases with lower limb injury above the knee four were in stage IV, one in stage III, and one in stage II. Of the nine cases with milder lower limb injury below the knee four occurred in stage III, four in stage II, and one in stage I. All cases of injury in the upper limb were milder. Postnatal or fetal hematocrit/hemoglobin was available in seven patients. In four the recipient was polycythemic, in one the donor. Review of the literature revealed 19 previously published cases of ischemic limb injury.

Conclusion: Peripheral limb necrosis is a rare complication of TTTS. In contrast to previous suggestions, it is unrelated to and precedes any treatment with either laser ablation or amnioreduction. Lesions tend to occur more often in severe hydropic recipients. We suggest that polycythemia and vasconstriction/hypertension are the primary factors causing an increased rate of ischemic events in recipients.

ABSTRACT #O13

Murine Placental System A Expression: Development and Effects of Synthetic Glucocorticoid Treatment

Melanie C. Audette[G](1), John R. G. Challis(1-5), Rebecca L. Jones(5), Colin P. Sibley(5), Stephen G Matthews(1-3).

Departments of (1)Physiology, (2)Obs/Gyn and (3)Medicine, University of Toronto; (4)Michael Smith Foundation for Health Research, Vancouver, BC;(5)Maternal and Fetal Heath Research Centre, School of Biomedicine, University of Manchester, UK.

Objective: Synthetic glucocorticoids (sGCs), which are administered to women in threatened preterm labour, differentially regulate the system A amino acid transporter *in vitro*. Recently, we have reported that murine placental system A transport dramatically increases over the second half of gestation. However, sGC treatment in mid-gestation reduced system A transplacental transport at term. The three system A transporter proteins are encoded by *Slc38a1*, *Slc38a2* and *Slc38a4* genes. The molecular mechanisms underlying development of, and sGC induced alterations in, system A activity are not known. We hypothesized that *Slc38a* gene expression increases across gestation from embryonic day (E)12.5 to E18.5 and is down-regulated by maternal sGC treatment.

Methods: In untreated C57BL/6 mice, mRNA expression was examined in placental tissue obtained from E12.5, E15.5 and E18.5 (term ~E19.5). Placental tissue was also obtained from pregnant dams treated with dexamethasone (0.1mg/kg) or saline on E13.5 and E14.5 to assess short-term (E15.5) and longer-term (E18.5) consequences on system A mRNA expression. Placental *Slc38a1*, *Slc38a2* and *Slc38a4* expression were measured by qRT-PCR.

Results: System A gene expression of *Slc38a1*, *Slc38a2*, and *Slc38a4* mRNA increased from E12.5 to E18.5 (*$p<0.05$; n=5-7 dams/group) in placentas from male and female fetuses; consistent with the increase in system A activity. No sex-specific differences in mRNA expression occurred across gestation. While we have shown sGC treatment to decrease system A activity at term, sGC treatment did not affect placental *Slc38a1*, *Slc38a2* and *Slc38a4* gene expression at E15.5 or E18.5 (n=8 dams/group).

Conclusions: System A mRNA and activity increase across the second half of gestation to meet the increase nutrient demands of the fetus during this time. In addition, the sGC induced reduction in system A activity that we have reported at term is not mediated by alterations in system A mRNA expression. In this context, it is possible that post-transcriptional and/or post-translational modifications may mediate the reduction in system A activity.

Funded by: Canadian Institutes for Health Research.

ABSTRACT #O14

Sex-Specific Basis of Severe Placental Dysfunction

Melissa Walker[M](1), Brendan Fitzgerald(2), Sarah Keating(2), Rory Windrim(1), John Kingdom(1)**.**
(1)Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Department of Pathology & Laboratory Medicine, Mount Sinai Hospital, Toronto.

Objective: Our objective was to determine the placental basis for sex-specific differences in perinatal complications in severe placental disease

Methods: This is a retrospective study with institutional ethics approval. We studied singleton pregnancies delivering between 22^{+0}-32^{+6} weeks at Mount Sinai Hospital between 2000-2010 with either: i) pure severe intrauterine growth restriction (IUGR); ii) pure severe pre-eclampsia; or iii) mixed disease, and detailed placental pathology following delivery. Maternal characteristics, pregnancy and delivery information, and gross and histologic placental pathology findings were reviewed.

Results: 262 pregnancies met our inclusion criteria consisting of 76 pure IUGR, 64 pure pre-eclampsia, and 122 mixed disease cases. Males almost exclusively demonstrated velamentous umbilical cord insertions, a finding which was most evident in the pure IUGR group (13.6% vs. 0%, *p=0.039*); they also showed an increased maternal immune response to invading trophoblast cells (chronic deciduitis; 19.5% vs. 9.7%, *p=0.048*). Females had significantly more placental infarcts (73.1% vs. 56.3%, *p=0.0006*), which was most evident in the pure pre-eclampsia group.

Conclusions: Our data suggest differential vulnerability in placental development between males (extravillous cytotrophoblast) and females (syncytiotrophoblast). Since the genetic basis of trophoblast development is increasingly understood in mice, our data provides a rationale for exploring the sex-specific basis of these common and severely debilitating pregnancy complications.

Funded by: Rose Torno Chair at Mount Sinai Hospital to Dr John Kingdom.

POSTER ABSTRACTS

ABSTRACT #P-A1

Characterization of Pro-Apoptotic Mcl-1 Isoforms in the Regulation of Cell Death

Jessica Ebrahimi[M](1), Manpreet Kalkata(3), Julia Garcia(1), Isabella Caniggia(1,2,3)
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (2)Department of Obstetrics and Gynaecology, (3)Department of Physiology, University of Toronto.

Introduction: Mcl-1 (Myeloid cell leukemia factor 1) is a prosurvival member of the Bcl-2 family that plays a key role in both placental development and in trophoblast-related pathologies by governing trophoblast cell fate. Mcl-1 stability is tightly regulated by splicing and caspase-mediated cleavage generating a pro-apoptotic variant termed Mcl-1S and a cleaved product known as Mcl-1c. Autophagy has been recognized both as an adaptive mechanism to cellular stress and an alternative cell death pathway. We have recently found that pro-survival Mcl-1 is a direct inhibitor of autophagy in trophoblast cells. The **objective** of this study is to determine the involvement of pro-apoptotic Mcl-1S and Mcl-1c in cell death and autophagy.

Methods: First trimester placental samples were obtained from elective pregnancy terminations. Western blots analyses for Mcl-1 isoforms, LC3B-II, and cleaved caspase 3 were performed on human choriocarcinoma JEG3 cells and placental cell lysates. Immunofluorescence staining for the various Mcl-1 isoforms was performed in HEK-3 cells. Lysotracker was used as a marker of autophagy.

Results: Transient transfections of JEG3 cells with the pro-survival Mcl-1L vector resulted in decreased expression of LC3B-II, a marker of autophagy. Conversely, transfection with Mcl-1c resulted in an increase in LC3B-II expression levels and in increased lysosomal activity. In contrast, Mcl-1S overexpression increased cleaved caspase 3 expression, but did not change LC3B-II levels compared to control vehicle treatment. Immunofluorescence staining in Mcl-1L overexpressed cells revealed a diffuse cytoplasmic localization for Mcl-1L, while transfection with Mcl-1c vector resulted in its localization to a perinuclear region proximal to the Golgi apparatus.

Conclusion: Our data highlight a novel role for the pro-apoptotic Mcl-1c as an inducer of autophagy in trophoblast cells. This is in contrast to Mcl-1L, which is a repressor of autophagy.

Funded by: CIHR

ABSTRACT #P-A2

Developmental Basis of Placental Infarction

Christopher Franco[M](1), Melissa Walker(1,2), Julie Robertson(1,2), Brendan Fitzgerald(1,3), Sarah Keating(1,3), Anne McLeod(1,4), John Kingdom(1,2).
(1) University of Toronto, Faculty of Medicine, (2)Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3)Department of Pathology & Laboratory Medicine, Mount Sinai Hospital, (4)Department of Medicine, Sunnybrook Health Sciences Centre.

Objective: Placental infarction is the most common pathologic lesion found following severe pre-eclampsia, intrauterine growth restriction and stillbirth. Maternal thrombophilia is considered causal and forms the rationale for heparin to improve outcome in subsequent pregnancies. Our objective was to determine the association of positive maternal thrombophilia testing versus additional pathological evidence of abnormal placentation with placental infarction.

Methods: We performed a retrospective cohort study over a 10 year period in 180 singleton high-risk pregnancies (delivery 22-34^{+6} weeks) that had histologic evidence of placental infarction. The rate of positive maternal tests for anti-phospholipid syndrome, factor V Leiden and prothrombin gene mutation were compared with the rate of detection of one or more gross or histological features of abnormal placentation (impaired placental development/differentiation, maternal vascular under-perfusion, fetal vascular under-perfusion, chronic inflammation or intervillous thrombosis).

Results: Only 14/108 (13.0%) of placentas with documented infarction were associated with a positive maternal thrombophilia result. In contrast, 67/108 (62.3%) placentas showed features of abnormal placental development/differentiation and 85/108, (78.7%) had evidence of non-infarct related maternal vascular under-perfusion ($p<0.001$). Only 4/108 (3.7%) infarcted placentas had no other pathologic lesions.

Conclusions: Our data indicate that gross and histologic features of abnormal placentation associate strongly with placental infarction in comparison with maternal thrombophilia tests. Biochemical and sonographic evaluation of placental development and function in the early part of a subsequent pregnancy may be of greater relevance to the risk of adverse perinatal outcomes mediated by placental infarction than interval thrombophilia testing of the mother.

Funded by: Funding provided by a Rose Torno Chair awarded to Dr John Kingdom from Mount Sinai Hospital. The source of funding played no role in any stage of research design, analysis, or manuscript preparation.

ABSTRACT #P-A3

Characterization and Regulation of Acid Ceramidase and Sphingomyelinase in Normal and Pathological Human Placenta

Megan Melland-Smith[G](1,2,3) Rashef Tal and Isabella Caniggia(1,2,3)
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Departments of (2)Physiology and (3)Obstetrics and Gynaecology, University of Toronto.

Introduction: Sphingolipids, classically thought to be purely inert structural elements of the cell membrane, have recently been recognized to act as bioactive lipid mediators in a variety of patho-physiological processes. In particular, ceramides (CERs) have been shown to be important second signal effector molecules regulating cell. Preeclampsia (PE) is a devastating pregnancy-related disorder associated with placental hypoxia/oxidative stress and exuberant trophoblast cell death. Sphingolipid metabolism, in particular ceramide expression, is regulated by the enzymes, acid ceramidase (AC) and sphingomyelinase (ASM) which are responsible for ceramide synthesis and breakdown respectively.

Objectives: To characterize the mechanism(s) regulating the expression of AC and ASM in the human placenta in normal and pathological pregnancy.

Methods: Protein expression levels of AC and ASM were assessed in normal and pathological human placental tissue using Western Blot analysis. Human villous explants and choriocarcinoma JEG3 cells were treated with sodium nitroprusside (SNP: 2.5 and 5 mM), a nitric oxide donor known to mimic oxidative stress. Human villous explants and JEG3 cells treated with and without SNP were cultured in the presence and absence of glycosylation inhibitor, tunicamycin. Lipid profiles in SNP-treated cells were analyzed by high performance liquid chromatography linked to tandem mass spectometry (MS/MS).

Results: Placental lysates from preeclamptic patients revealed a significant decrease in both mRNA and protein expression of AC as compared to age-matched controls (AMC). Conversely, ASM protein expression and its glycosylation product increased in PE relative to normotensive control placentae. Exposure of JEG3 cells to SNP increased CER expression and this was accompanied by a decrease in AC and an increase in glycosylated ASM levels. Preliminary data suggests that human villous explants treated with SNP increased CER expression and this was accompanied an increase ASM expression and glycosylation.

Conclusions: Altered expression levels of AC and ASM in preeclamptic placentae, induced by the oxidative stress status, are responsible for changes in the sphingolipid rheostat which it turn may contribute to the genesis of this disorder. (Supported by CIHR)

ABSTRACT #P-A4

Characterization of Mechanisms of Sflt-1 Anti-Angiogenic Function in Preeclampsia

Dennis K. Lee [PD](1), Isabella Caniggia(3,4), Ori Nevo(1,2)**.**
(1) Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre, (2) Department of Obstetrics and Gynecology, University of Toronto (3) Department of Physiology, University of Toronto and (4) the Samuel Lunenfeld Research Institute, Mount Sinai Hospital.

Objective: Preeclampsia (PE) is a common pregnancy-specific disorder characterized by hypertension and proteinuria which affects 3-5% of women. In the most severe cases of PE, complications arise early in pregnancy with only delivery of the fetus and placenta available as treatment. sFlt-1 is a truncated form of the vascular endothelial growth factor (VEGF) receptor-1 and is thought to sequester and attenuate VEGF and placental growth factor signaling. Elevated levels of sFlt-1 have been shown in both serum and placental tissue in PE pregnancies correlating to the severity of the disorder. Our objective is to determine the underlying mechanisms bridging increased levels of sFlt-1 and alterations in downstream signaling that contribute to the pathophysiology of PE.

Methods: Human placental tissue samples were collected from early onset PE and age-matched preterm control (PTC) pregnancies. Immunofluorescence (IF) staining was performed on PE and PTC tissue sections for spatial localization of sFlt-1 and VEGF receptor-2 (VEGFR-2). Expression levels of sFlt-1 and VEGFR-2 were assessed by western analysis comparing lysates prepared from PE and PTC tissue. Co-immunoprecipitation (IP) studies were performed to elucidate differences in sFlt-1 and VEGFR-2 association.

Results: IF staining of PTC placentae revealed discrete sFlt-1 expression in the endothelial layers of the vasculature and low to absent staining in trophoblasts layer. Conversely, sFlt-1 localization in PE placentae was found throughout thick smooth muscle layers surrounding the vasculature and in the trophoblast layers. Western analyses revealed greater overall levels of sFlt-1 in PE vs. PTC lysates. IP with a VEGFR-2 specific antibody followed by western analyses with a sFlt-1 specific antibody of PE and PTC samples revealed positive signals for sFlt-1 only in PE lysates. Co-IF for sFlt-1 and VEGFR-2 revealed positive co-localization in PE placentae with low to absent co-localization in PTC tissue.

Conclusions: Increased and redistributed sFlt-1 expression in preeclamptic placental tissue and the presence of sFlt-1/VEGFR-2 complexes suggest that sFlt-1 may have other inhibitory actions on downstream signaling in addition to the direct neutralization of free VEGF.

Funded by: Faculty of Medicine, Deans' Fund and the Canadian Institutes of Health Research.

ABSTRACT #P-A5

The Role of Decidual Neutrophils in Mouse Angiogenesis (Work-in-Progress)

Melissa Kwan [G](1,2), Hagai Amsalem (3), Caroline Dunk (2), Stephen Lye (1,2,4).
(1) Department of Physiology, Faculty of Medicine, University of Toronto, (2) Research Centre for Women's and Infants' Health, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3) Hadassah School of Medicine, Hebrew University, Jerusalem, Israel, (4) Department of Obstetrics and Gynecology, Faculty of Medicine, University of Toronto

Objective: During early pregnancy, a large infiltrate of immune cells is recruited to the decidua concurrent with extra-villous trophoblast invasion, implicating a significant role for decidual leukocytes in spiral artery transformation. Traditionally, neutrophils have not been postulated to participate significantly in spiral artery remodeling and decidual angiogenesis due to their near absence in the maternal decidua in the first trimester. While neutrophils are a major component of the peripheral blood leukocyte population, they do not reside in peripheral tissue until detection of inflammatory stimuli, at which point they are recruited to the location of infection by neutrophil-specific chemokines and cytokines. We have recently identified a novel population of neutrophils residing in second trimester decidua, which infiltrate the decidual tissue and are found clustered around blood vessels. To eliminate the possibility that the invasion of decidual neutrophils may simply be due to an inflammatory process associated with the termination of second trimester pregnancy, our aim is to determine whether a similar neutrophil population exists in the mouse.

Methods: Pregnant CD-1 mice were euthanized at days (d) 6, 8, 10, 12, 14, and 18 of gestation (19 – term). Intact uterine horns were removed from mice and immunohistochemistry was performed on formalin-fixed tissue stained with a neutrophil-specific marker (7/4). Neutrophil number and localization was assessed by counting 7/4-positive cells within the mesometrial triangle using newCast stereology software.

Results: Initial results show that neutrophils are present in mouse decidua throughout pregnancy. Neutrophils were found in and around the developing maternal uterine arteries of the mesometrial triangle. At d6, neutrophils were observed both clustered at the invading front of trophoblast and around maternal arteries suggesting an active role in angiogenesis and trophoblast invasion. Preliminary stereological analysis of immunohistochemical staining indicates that neutrophil infiltration of decidua is greatest at d6 and d8 (early gestation).

Conclusions: Our results demonstrate that neutrophils can be found throughout gestation in the mouse, with neutrophil number highest during early gestation, corresponding with the most active phase of angiogenesis. This may lend supporting evidence to our finding of neutrophils in human decidua and a postulated angiogenic role. The secretion of pro- and anti-angiogenic factors by neutrophils in tumours has previously been shown by numerous groups – taken together with their close association with blood vessels, our data suggests that neutrophils perhaps play a more significant role in decidual angiogenesis than previously thought. Further research is required to define a specific role for this neutrophil population.
Funded by: Physicians Services Inc. and CIHR (IHD-86232)

ABSTRACT #P-A6

Expression of Pro- and Anti-Angiogenic Isoforms of VEGFA in the Placenta and Maternal Organs during Pregnancy in Mice

Abhijeet Minhas [G] (1,2,4), Shannon Bainbridge (3), Dawei Qu (1), Hoon-Ki Sung (1), Andras Nagy (1), and S. Lee Adamson (1,2,4).
(1) Samuel Lunenfeld Research Institute, (2) Mount Sinai Hospital; Department of Obstetrics & Gynecology, University of Toronto; (3) Interdisciplinary School of Health Sciences, University of Ottawa; (4) Department of Physiology at the University of Toronto.

Objective: Through alternative splicing VEGFA can act either as potent angiogenic or anti-angiogenic factors. Pro-angiogenic VEGFA120/164 increases in maternal plasma in late gestation but its source and function are unknown. The recently discovered anti-angiogenic isoform, VEGFA165b, is expressed in the human placenta but its role in pregnancy is also poorly understood. Given the increase in vessel growth that occurs during pregnancy, we hypothesized that the expression of VEGFA120/164 would increase, and VEGFA165b would decrease, in the placenta and/or maternal organs during pregnancy.

Methods: Organ and plasma VEGFA120/164 and VEGFA165b proteins were measured by ELISA in ICR female mice before pregnancy and in maternal organs, decidua, and placenta at gestational ages E9.5 (umbilical blood flow begins), E13.5, and E17.5 (near term).

Results: VEGFA120/164 protein in the ovary increased seven-fold by E13.5 and remained high at E17.5 consistent with a high level of ovarian angiogenesis in pregnancy. VEGFA120/164 did not change significantly in the kidney, lung, and heart. In contrast, VEGFA120/164 decreased in the decidua by 23-fold and in the placenta by 13-fold between E9.5 and E13.5 and remained low at E17.5 ($p<0.0001$). This is surprising because vascularity markedly increases in the placenta during this time. However, VEGF165b in the placenta decreased approximately two-fold by E13.5 and remained low at E17.5 ($p=0.009$) potentially promoting vascularity. A two-fold decrease in VEGF165b was also seen in the ovary, but expression in the kidney and lung did not significantly change with gestation. VEGFA120/164 in maternal plasma increased significantly by two-fold at E13.5 and remained high at E17.5. Plasma VEGF165b was undetectable.

Conclusion: Results suggest that the high levels of VEGFA120/164 in plasma in late gestation may be due to high expression of VEGFA120/164 in the ovary. Contrary to our expectations, VEGFA120/164 expression in the placenta and decidua decreased in late gestation so they are not likely to be the source. Decreased VEGF165b in the ovary and placenta at E13.5 may promote angiogenesis but continued angiogenesis to E17.5 appears to involve other angiogenic mechanisms.

Supported by CIHR MOP-93618.

ABSTRACT #P-B1

Identifying Pathways Involved in Oocyte Fate via Regulation of Mcl-1

Shakib Omari[G](1), Andrea Jurisicova(1,2)**.**
(1) Department of Physiology, University of Toronto, (2) Department of Obstetrics and Gynecology, Samuel Lunenfeld Research Institute, Mount Sinai Hospital

Objective: To determine pathways regulating Mcl-1 in oocyte development and follicle fate.

Methods: Various pathways governing oocyte survival have been published; however actual downstream determinants of the oocyte fate have not yet been elucidated. The Scf ligand, expressed by granulosa cells, and its associated receptor Kit, expressed by oocytes, has been posited as the means of communication by which follicle fate is controlled. In fact, numerous studies have indicated an important role for the Scf-Kit interaction in the primordial-to-primary oocyte transition. Signals received via this communication can activate a number of downstream regulatory pathways that control oocyte fate. We believe Mcl-1 is a downstream regulator of oocyte survival, and have analyzed an Mcl-1 oocyte-specific conditional knockout mouse model to show the necessity of Mcl-1 in oocyte survival. In this study, we investigate the pathways that regulate Mcl-1 expression.

Results: Mcl-1 oocyte-specific conditional knockout mice undergo Premature Ovarian Failure, with primordial oocyte loss as early as 3 weeks. To determine regulatory pathways controlling Mcl-1, primary oocytes were collected from d8 wildtype animals and cultured in vitro, in the presence or absence of Scf. Treatments with Scf show a time-dependant increase in Mcl-1 protein levels via Western Blots. Treatment with LY294002, a PI3Kinase inhibitor, in d8 primary oocytes shows a decrease in Mcl-1 levels. Additionally, the GSK3 inhibitor IX, or LiCl, can cause an increase in Mcl-1 levels.

Conclusions: Our data suggests a role for Mcl-1 as a pro-survival factor in the regulation of oocyte fate. We confirm the putative role of Scf in oocyte survival and show that regulation of oocyte survival via the PI3Kinase pathway does involve Mcl-1 stability.

ABSTRACT #P-B2

Human Menopausal Gonadotropin (hMG) *vs.* Recombinant Follicle Stimulating Hormone (Rfsh) for Ovarian Stimulation in Pcos Patients Undergoing IVF

Stephanie Grover [O], Prati A Sharma, Agata Sojecki, Hanna Balakier, Clifford Librach.
CReATe Fertility Centre, Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, Women's College and Sunnybrook Health Sciences Centre, University of Toronto.

Objective: According to the two-cell, two gonadotropin concept, both FSH and LH are required for normal follicular development and steroidogenesis. Previous work has shown that there may be an improvement in IVF outcomes in non-PCOS infertile women when hMG *vs.* rFSH alone is used for ovarian stimulation. Our objective was to investigate whether hMG improves IVF outcomes over rFSH in PCOS women.

Methods: Retrospective cohort study of 85 infertile women with PCOS (age: 33.8±3.57) who underwent IVF ± ICSI. Patients underwent a GnRH-a downregulation or GnRH-ant protocol with rFSH alone (N=13, rFSH group) or rFSH+hMG (N=72, hMG group) (150-600 IU/day) for 10-12 days. Once the majority of follicles were 18 mm, hCG (5-10,000 U) was given followed by oocyte retrieval at 35h and day 3 or 5 ET. Primary outcomes studied were peak E2 levels, #oocytes retrieved, #MII, #2PN, #embryos transferred, #frozen embryos, implantation (IR), ongoing pregnancy rates (OPR), OHSS, and multiples.

Results: There were no significant differences in #oocytes retrieved (19.46±13.70 *vs.* 19.29±9.40), #MII (15.62±9.67 *vs.* 14.63±7.24), #2PN (9.31±7.87 *vs.* 8.36±5.08), #ET (2.32±1.30 *vs.* 2.79±1.28) and #frozen (5±7.19 *vs.* 2.79±3.15) in the rFSH *vs.* hMG groups, respectively. There were no significant differences in IR (61.5% vs. 47.2%) or OPR (46.2% vs. 30.6%) in the two groups (FSH *vs.* hMG). Interestingly, OHSS was significantly lower in the hMG group (46.2% *vs.* 9.7%, rFSH *vs.* hMG, $P<0.05$ using Fisher Exact test).

Conclusions: This preliminary study suggests that although ovarian stimulation with rFSH or hMG produces similar IVF results in PCOS patients, using hMG may reduce OHSS. This may be due to LH suppression of small and medium sized follicular growth. Given that PCOS patients are at high risk for OHSS, hMG may be the preferred gonadotropin to use in this subset of patients.

ABSTRACT #P-B3

Using Nimodipine, a Calcium Channel Blocker, to Delay a Spontaneous LH Surge in Women with Regular Menstrual Cycles

Dan Nayot [R](1), **Shany Klachook [O]** (2), Robert F Casper (1,2)**.**
(1) Department of Obstetrics & Gynaecology, Mount Sinai Hospital, University of Toronto. (2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, University of Toronto.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-B4

Serum and Follicular Fluid Complement Cascade Factors during Stimulated Cycles in Patients with PCOS

Shlomit Kenigsberg[O](1), Shir Dar(1), Leila Maghen(1), Stephanie Grover(1), Clifford Librach(1, 2, 3).
(1) CReATe Fertility Centre; (2) Department of Obstetrics & Gynaecology, University of Toronto; (3) Division of Reproductive Endocrinology and infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre.

Objective: The complement cascade is a key biological system in the ovulation process and has an important role in the microenvironment of the growing follicle. Many of the components of the complement cascade, such as CH50, C3 and C4, have previously been found to be present in different levels concentrations in the follicular fluid (FF) versus serum. It has been suggested that complement cascade proteins in serum may be biomarkers for PCOS (Matharoo-Ball B, 2007; Insenser M, 2010). We were interested in investigating the levels of complement cascade components in the FF and serum from PCOS patients compared to control non-PCOS patients, who were undergoing controlled ovarian hyperstimulation for IVF.

Methods: FF obtained by aspiration of the first mature follicle from each ovary, as well as serum, were obtained from consenting study participants. Of the 28 women recruited thus far, 16 were diagnosed with PCOS. The FF concentration of C3, C4 and total complement activity (CH50) were measured and correlated with serum levels and hormone levels in these patients.

Results: Preliminary results indicate that there was no statistically significant difference in the levels of the complement cascade proteins in the FF women with PCOS versus controls (Fisher Exact test, $p = 0.5$).

Conclusions: Although preliminary results indicate that there is no difference in FF complement levels from PCOS patients, further investigation will be performed in order to look at subclasses of patients with PCOS, such as lean and obese. We will also be increasing our sample size and investigating differences in serum levels of C3, C4 and CH50.

References:

1. Insenser M, J Clin Endocrinol Metab. 2010. 95(8):3863-70. Proteomic analysis of plasma in the polycystic ovary syndrome identifies novel markers involved in iron metabolism, acute-phase response, and inflammation.

2. Matharoo-Ball B., Journal of Proteome Research 2007, 6, 3321-3328. Characterization of Biomarkers in Polycystic Ovary Syndrome (PCOS) Using Multiple Distinct Proteomic Platforms.

ABSTRACT #P-B5

Regulation of Autophagy by Nlrp5 in Preimplantation Embryos. (Work-In-Progress)

Taline Naranian[G](1,2), Ala Perumalsamy(1), Russanthy Velummailum(1), Tong ZhiBin(3), Igor Jurisica(4), Lawrence Nelson(3) and Andrea Jurisicova(1,2). (1)Samuel Lunenfeld Research Institute, Obstetrics and Gynecology, Mount Sinai Hospital (2)Department of Physiology, Mount Sinai Hospital, University of Toronto, (3)Developmental Endocrionology Branch, National Institutes of Child Health and Human Development, National Institutes of Health, (4) Ontario Cancer Institute, Princess Margaret Hospital.

Objective: Originally identified during a screen for autoimmune primary ovarian failure, NALP5 is an oocyte specific protein that plays a critical role during early embryo development. This is evident in Nlrp5-deficient females, where ovulation and fertilization are normal but developmental failure occurs shortly after. Despite this strong phenotype, very little is known about the function of NALP5 and the pathways affected by its deficiency. Autophagy has been recognized as a key event during oocyte to embryo transition, essential for the elimination of maternal products. Autophagy-protein-5 (ATG5) deficient embryos, originating from ATG5-deficient oocytes, display early embryonic lethality - a phenotype very similar to Nlrp5-deficient embryos. Therefore, we hypothesize that NALP5 plays an important role in the clearance of accumulated maternal products via regulation of autophagy. We propose to interrogate this pathway and confirm key findings in wild-type and NALP5 deficient embryos.

Methods: To investigate whether NALP5 deficient embryos exhibit decreased autophagy, we used immunocytochemistry analysis to determine expression levels of cl-LC3, Lysotracker, Beclin-1 and the accumulation of Ub-proteins in these embryos. Further, to establish whether mTOR signaling pathway contributes to the developmental arrest of NALP5 deficient embryos, we will determine mTOR phosphorylation status. We will also evaluate the mRNA expression of various mRNA targets from microarray analysis by qRT- PCR,

Results: Consistent with our hypothesis, we have observed decreased lysosomal activity, evidenced by decreased Lysotracker signal in Nlrp5-deficient embryos. Furthermore, decreased expression of cl-LC3 was also detected, consistent with improper activation of autophagosomes. Interestingly, this was accompanied by elevated expression of Beclin-1, which formed aggregates in the cytoplasm of Nlrp5-deficient embryos. Furthermore, the transcript microarray profile of Nlrp5-deficient oocytes revealed de-regulated expression of ATG10 and several de-ubiquitinating enzymes implicated in the regulation of protein degradation.

Conclusions: With limited autophagy, Nlrp5-deficient embryos likely fail to eliminate maternal products, degradation of which is mandatory for the proper transition from oocyte to embryo. These experiments will assess the impact of NALP5 on embryo survival and explore mechanisms that are responsible for maintaining normal preimplantation development.

Funded by: Supported by grant from the Canadian Institute for Health Research (CIHR) and Genesis Research Foundation.

ABSTRACT #P-B6

Comparing Recombinant FSH (recFSH) Alone to a Mixed recFSH/HMG Regimen for IVF Stimulation in an Anonymous Ovum Donor Population.

Agata Sojecki[O](1), Shir Dar(1) and Clifford L Librach(1,2,3)
(1)CReATe Fertility Center; (2)Department of Obstetrics & Gynecology, University of Toronto; (3)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre.

Introduction: The potential benefit of adding LH (recombinant or in a human menopausal gonadotrophin (HMG) preparation) to recFSH for IVF stimulation was examined in this study. Some studies on infertile couples have shown beneficial effects on the number of oocytes collected, the number of mature oocytes reaching metaphase II and on fertilization rate, while others found no significant difference.

Aim: To compare outcome parameters after stimulation with recFSH vs. recFSH plus HMG using a long protocol in a cohort of anonymous egg donors.

Methods: For this retrospective cohort study, charts of 253 egg donors were reviewed. The donors were divided into two groups according to the stimulation protocol used. Group I (n = 100) underwent ovarian stimulation with r-FSH (follitropin alpha: Gonal-f^{R}) alone and Group II (n =153) had ovarian stimulation with r-FSH plus HMG (Menotropins 75IU FSH/75IU LH per vial: Repronex^{R} Ferring) added on the 8th day of stimulation. All donors underwent a standard long IVF protocol using birth control pills (Marvelon^{R}) and Leuprolide acetate 1 mg SC daily as the GnRH agonist.

Result(s): The mean age and mean AMH levels were 25y/o and 33 pmol/L for group I and 26y and 29 pmol/L for group II. There were no significant differences in age and AMH leveds between the groups. The number of oocytes in metaphase II at retrieval was significantly higher in group I compared to group II (11.81 and 9.81 respectively, p=0.02). The number of oocytes collected was not significantly different (18.77 vs. 16.71, p=0.09). Pregnancy rates and miscarriage rates were 47% and 10% in group I and 49% and 13% in group II. There were no significant differences. IVF and ICSI fertilization rates and number of embryos for freezing were not statistically different between the Groups. The other clinical and laboratory results analyzed did not show differences between groups.

Conclusion: The number of oocytes reaching metaphase II was significantly higher with a recFSH alone protocol, as compared to a mixed recFSH/HMG protocol. The addition of HMG in a mixed protocol did not improve pregnancy outcome overall. Using a simpler regimen for this population could potentially result in less medication errors and better patient compliance.

ABSTRACT #P-C1

Caesarean Section in the Second Stage

Kalpana Singh Sharma [R], Rory Windrim, John Kingdom
Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital

Background: Cesarean section in the second stage of labour is increasing due to physician avoidance of forceps and patient/partner preference. However this surgery has definite risks due to tissue edema and a potentially-engaged fetal head.

Objective: To assess the impact of intra-operative maneuvers developed by 2 staff physicians during Cesarean section in the second stage to facilitate delivery of an engaged fetal vertex on surgical complications and blood loss.

Methods: Retrospective electronic chart review of OB-TV from launch (November of 2005) until September of 2010 at Mount Sinai Hospital for Cesarean section at full dilatation by RW or JK (cases). The explicit use of up to 5 intra-operative safety maneuvers was audited. Each case was randomly-matched by month with 2 controls that underwent second stage Cesarean section by any other physician. A score out of 10, with 2 points per maneuver, is assigned to all cases and controls. Operative reports are being reviewed for; difficulty of head delivery, angle extension, blood loss and transfusion, hematuria, urologic injury and infant outcome including head trauma.

Results: Seven hundred and twelve Cesarean sections in the second stage were done in this period. 42 cases were identified and 84 controls were selected. To date, 80 of these charts have been reviewed. Data entry and analysis will be available at the Research Day meeting.

Conclusions: TBA

ABSTRACT #P-C2

Does Surgical "Warming-Up" Improve Operative Performance?

Jamie Kroft [F] (1), Rebecca Arthur (2), Richard Pittini (1)
(1) Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre
(2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, Mount Sinai Hospital

Objective: To determine if pre-operative warm-up, using a validated bench model for intra-corporeal suturing, improves efficiency, precision and quality of laparoscopic suturing.

Methods: This will be a stratified randomized cross-over trial of junior and senior obstetrics and gynecology residents, generalists and minimally invasive specialists at the University of Toronto. Stratification will be based on the above level of surgical expertise. Participants will be randomized to warm-up or no warm-up, and then act as their own controls at least two weeks later. Warm-up will consist of the use of a laparoscopic bench model to practice intracorporeal suturing for 15 minutes. All participants will then perform a pre-validated intracorporeal suturing task (after either warm-up or no warm-up). A two-sided sample size estimation was performed using the statistical software SAS 9.2, with a sample of 8 needed in each group. We will therefore aim to include 10 subjects in each of the four groups of surgical expertise. Statistical analysis will be carried out using SPSS v. 18 to compare each participant's score with and without warming-up. We will also compare difference in improvement with warming-up between levels of surgical expertise and volume of laparoscopic suturing.

Results: This is a work-in-progress. At the time of this submission, 12 residents (7 junior and 5 senior) have been recruited. Updated results will be presented.

Conclusions: This study will allow us to determine if there is a benefit of pre-operative warm-up at every level of surgical expertise. This could have potential advantages for patient safety, operating room efficiency and cost, as well as on long-term surgeon health.

ABSTRACT #P-C3

A Novel Approach to the Surgical Management of Clitoral Phimosis

Jamie Kroft [F], Michael Shier
Department of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre

Objective: To outline a novel method for surgical correction of clitoral phimosis caused by vulvar lichen sclerosus or lichen planus and to review the post-operative outcomes.

Methods: A retrospective chart review was conducted of 23 patients who have been treated with the CO2 laser for clitoral phimosis secondary to lichen sclerosus (LS) or lichen planus (LP) of the vulva. The patients' demographics and post-operative results were documented. Statistical analysis was performed to compare effects of suturing versus no suturing on recurrence rates.

Results: This surgical technique has been used in our centre for over 10 years with follow-up ranging from 3 months to 10 years. Twenty LS patients have been treated and three LP patients. All patients underwent individualized pre-operative and post-operative topical therapy with steroids or immunomodulators. Our practice changed to include suturing of the peri-clitoral skin, as this provided subjectively improved results, however, there was no statistically significant difference in re-agglutination with suturing (p=.65) in this review. Five LS patients had mild re-agglutination during follow-up but are satisfied with results and three required re-operation, with satisfactory results in follow-up. Two LP patients required re-operation. All patients reported improved psychosexual wellbeing and reduced vulvar symptoms.

Conclusions: This novel surgical technique has enabled the treatment of clitoral phimosis secondary to lichen sclerosus or lichen planus, restoring the anatomy, providing relief of symptoms and improved sexual function with a low rate of recurrence. Maintenance therapy with high potency steroids or immunomodulators after surgical correction is a vital component of treatment.

ABSTRACT #P-C4

The Laparoscopic Myomectomy: An Eight-Year Experience at a Canadian Hospital with an Advanced Laparoscopy Training Program

Lindsay Shirreff [R](1), Grace Liu (2), Toni Burbidge (3), Rose Kung (2), Herbert Wong (2), Kay Lie (2).
(1) Department of Obstetrics & Gynaecology, University of Toronto, (2) Sunnybrook Health Sciences Centre, (3) University of Toronto.

Objectives: 1) To establish a Canadian data set on pre- and intra-operative characteristics of patients undergoing laparoscopic myomectomies (LMs). 2) To evaluate outcomes of patients having LMs by surgeons affiliated with an advanced laparoscopy training program. 3) To determine whether trainees play a role in LM cases at our centre.

Methods: Charts for LM cases performed at Sunnybrook Health Sciences Centre from April 2002 to April 2010 were reviewed retrospectively. Data collected included fibroid characteristics, operative time, estimated blood loss, length of hospitalization, complications and trainee involvement as first-assist to staff surgeons.

Results: During the study period, 265 LM surgeries were performed. Complete records were available for 256 cases. Menorrhagia was the most common indication for surgery (142 cases) followed by pelvic pain (103 cases). Mean operative time was 162 minutes (range, 29-390 minutes). Average number of fibroids resected per case was 3 (range, 1-19). Mean estimated blood loss was 345 mL (range, 50-3000 mL). Average length of post-operative hospital stay was 26 hours (range, 2-116 hours). The major complication rate was 8.6% with the most common complication being an unintended laparotomy (10 cases). Minor complication rate was 2.3%. Fellows and residents were first-assist to staff surgeons in 70% and 15% of cases, respectively.

Conclusions: 1) We present the largest Canadian data set on LMs. 2) The LM is a well-tolerated operation when done by an experienced laparoscopic surgeon. 3) Trainees actively participate in this operation at our hospital.

ABSTRACT #P-C5

Postgraduate Laparoscopic Skills Acquisition with Home-Based Laparoscopic Trainers – Is Peer Learning or Top-Down Teaching the Best Approach?

Crystal Chan[R, G](1,2), Shawn Chua(2), Cheryl Madeira (3), Heather Shapiro(1). (1)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (3)Ontario Institute for Studies in Education, University of Toronto.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-C6

Knowledge about H1N1 Influenza and the Vaccine Impacts Vaccination Uptake among Pregnant Women

Shannon E. Moore [R](1), Kellie E. Murphy (2), Leanne R. De Souza (3), Allison J. McGeer (4) and Mark H. Yudin (3)
(1) Department of Obstetrics & Gynaecology, University of Toronto (2) Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3) Department of Obstetrics & Gynaecology, St. Michael's Hospital, (4) Department of Microbiology, Mount Sinai Hospital

Objective: To determine whether knowledge of H1N1 influenza and safety of the vaccine during pregnancy affects vaccination uptake among pregnant women.

Methods: A 24-question survey was distributed to postpartum women at two academic tertiary care centers in Toronto, Canada during the spring of 2010. The survey assessed knowledge of H1N1 influenza and its effects during pregnancy, and knowledge about the H1N1 influenza vaccine, its safety, and recommendations for its use during pregnancy. Participants were asked if they received the vaccine and to comment on reasons for refusal. Survey responses were scored and chi-square analysis was used to compare the proportion of correct answers between vaccine recipients and non-recipients.

Results: A total of 530 questionnaires were completed and returned. The majority of patients correctly answered that H1N1 influenza is highly contagious (89%) and that it is sometimes serious enough to result in hospitalization (98%). Approximately half (56%) of responders received the H1N1 vaccine. Knowledge level about H1N1 influenza during pregnancy was higher among vaccine recipients. Vaccine recipients were significantly more likely than non-recipients to correctly answer that pregnant women have a higher risk of complications from H1N1 influenza (76% vs. 63%, $p=0.001$), that H1N1 vaccination during pregnancy is recommended (95% vs. 81%, $p<0.001$), and that the vaccine is safe in pregnancy (81% vs. 35%, $p<0.001$) and does not cause birth defects (57% vs. 25%, $p<0.001$). Non-recipients were less likely to have received information about the vaccine from their caregivers (78% vs. 92%, $p<0.001$). The most common reasons for not receiving the vaccine were concerns about its safety for the fetus (71%) and its safety in general (67%).

Conclusions: Pregnant women with greater knowledge of H1N1 influenza and vaccine safety are more likely to accept the vaccine during pregnancy. Patient education should focus on vaccine safety to help improve vaccination rates.

ABSTRACT #P-D1

Negative Modulation of TGF-ß Signaling in Ovarian Cancer Cells: A Role for Androgen and Veph1 (Work-in-Progress).

Premalatha Shathasivam [G](1,2,3), A. Kollara(1,3), J. Wrana(1,4), and T. J. Brown(1,2,3).
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital; Departments of (2)Physiology, (3)Obstetrics and Gynaecology, and (4)Medical Genetics and Microbiology, University of Toronto.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-D2

Sustained Ovulation-Associated Inflammatory Signalling in Fallopian Tube Epithelium as a Predisposing Factor of Serous Carcinoma.

Tomer Feigenberg [F] (1), Alicia Tone [PD] (1,2), Terrence Colgan (3), K. Joan Murphy (1), Lisa Allen (4), Ellen Greenblatt (2), Michele Farrugia (4), Elyse Levinsky (4), Jodi Shapiro (4), Carl Virtanen (5), Barry Rosen (1), and Theodore Brown (2). (1) Div. of Gynecologic Oncology Princess Margaret Hospital, (2) Div. of Reproductive Endocrinology & Infertility Mt. Sinai Hospital, (3) Gynecological Pathology & Cytopathology Mt. Sinai Hospital, (4) Dept of Obstetrics & Gynecology Mt. Sinai Hospital, (5) University Health Network Microarray Centre

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-D3

Characterization of Bovine Oviductal Epithelial Cells in Culture and Response to Follicular Fluid Exposure (Work-in-Progress)

Angela Lau [G](1-3), Alexandra Kollara (1, 2), Alicia Tone (1,2), Ellen M Greenblatt (1,2), W Allan King (4), Theodore J Brown (1-3).
(1) Samuel Lunenfeld Institute, Mount Sinai Hospital, (2) Department of Obstetrics and Gynecology, and (3) Department of Physiology, University of Toronto, and the (4) Department of Biomedical Science, University of Guelph Veterinary School.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-D4

Confirmatory Factor Analysis of the Sexual Adjustment and Body Image Scale in Women with a Diagnosis of Gynaecologic Cancer

Marie Wegener [M](1), Sara Urowitz (2), Sarah E. Ferguson(1).
(1)Department of Gynecologic Oncology, Princess Margaret Hospital, (2)Department of Psychiatry, Princess Margaret Hospital.

Objectives: There is evidence that treatment of gynaecologic cancer (GC) negatively affects body image and sexuality. The Sexual Adjustment and Body Image Scale in women with GC (SABIS-G) was developed to assess disturbances after GC. Exploratory factor analysis resulted in a two factor structure with the underlying constructs of body image and sexual adjustment. Our objective was to confirm the factor structure using a confirmatory factor analysis (CFA).

Methods: Women with a history of GC without active disease completed the SABIS-G, a 9-item self-report measure. CFA was performed in which the hypothesized two-factor model was tested against a one-factor model. Cronbach's coefficient alpha was calculated as a measure of internal consistency reliability for subscales. Test-retest reliability between baseline and follow-up scores was assessed using the intra-class correlation coefficient (ICC). Correlation coefficients between SABIS-G and other instruments were calculated as measures of validity.

Results: 357 patients were approached to participate, 254 (71%) consented to the study and 154 (61%) completed the SABIS-G. The median age was 54 (30-77) and the primary site of disease was: 64 (42%) uterine, 54 (35%) ovary and 32 (21%) cervix. Two variables were eliminated based on the analysis of CFA residuals and modification indices. The median SABIS-G score was 46 (3-100) with lower scores indicating greater disturbance. The CFA fit indices indicated excellent fit for the two-factor measurement model (standardized root mean square residual 0.05, non-normed fit index 0.96, comparative fit index 0.98). The two-factor solution provided significantly better fit compared to the one-factor solution ($\chi_1^2 = 174.6$, $p < 0.001$). Internal consistency reliability was high for the Body Image $(\alpha = 0.88)$ and Sexual Adjustment $(\alpha = 0.86)$ subscales, as was test-retest reliability (ICC = 0.88). Correlation coefficients support the concurrent, convergent and discriminant validity of SABIS-G.

Conclusions: These results confirm the two factor structure of the SABIS-G and provide evidence that this is a valid and reliable instrument to measure changes in body image and sexuality in women after a diagnosis of GC.

Funded by: Princess Margaret Hospital

ABSTRACT #P-D5

Visual Inspection with Acetic Acid (VIA) in Rural Zimbabwe: Analysis of the Implementation of Cervical Cancer Screening

Beth Cruickshank[R] (1), Barry Rosen(2), Paul Thistle(3).
(1)University of Toronto, Department of Obstetrics & Gynaecology (2) Gynaecology Oncology, Department of Obstetrics & Gynaecology (3) University of Zimbabwe, Department of Obstetrics & Gynaecology.

Objective: There are 500,000 new cases of cervical cancer each year, and 80% are in low-resource countries. Cervical cancer is preventable and treatable yet screening programs are not always readily available. In Zimbabwe, cervical cancer screening has been fraught with logistical and economic obstacles. At Howard Hospital, a rural district hospital, efforts have been made to improve this situation with the introduction of VIA in February 2009. The purpose of this study was to evaluate the effectiveness of the program and to generate recommendations for improvement.

Methods: Data was collected from clinic record books and pathology reports of patients who participated in the VIA program between February 2009 and September 2010.

Results: 1408 patients (4.7% of the local catchment area) were screened during the study period. 33.3% screened VIA positive but colposcopy was performed on only 57.9%. From these, 89.7% had either LEEP or cervical biopsy. Pathology results were available for 81.6% with the remainder unreported or missing from medical records. Results of the biopsies included; normal (20.1%), benign (34.7%), CIN I (16.1%), CIN II (9.5%), CIN III (14.1%), and invasive carcinoma (5.5%).

Conclusions: The VIA program at Howard Hospital is one of the few cervical cancer screening programs in Zimbabwe. Precancerous lesions were detected in 29.0% of patients who had colposcopy. However, the major obstacles impeding this program are poor patient participation, lack of follow through to colposcopy, and missing pathology reports. Community mobilization, patient education, continuity of care, and improved infrastructure are areas that require improvement.

ABSTRACT #P-E1

Expression of Genes Regulating the Smooth Muscle Contraction in the Vaginal Tissue of Women with and without Pelvic Organ Prolapse

Maria Bortolini (1-4), Oksana Shynlova (1), **Nadiya Oleksiv [O](1)**, Harold Drutz, MD(2,4), Stephen Lye (1,2,3), May Alarab (1,4).
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (2)Obstetrics and Gynaecology; (3)Physiology and (4)Urogynaecology, Mount Sinai Hospital, University of Toronto.

Objectives:: Pelvic Organ Prolapse (POP) is a major health issue that effect millions of women world wide. The etiology of this affection is obscure. Dysfunction of the smooth muscle component [SM] may influence this problem. We hypothesize that the expression of genes that regulates the vaginal smooth muscle contraction are (1) altered in women with POP and (2) altered in women after the menopause. We aim to study the gene expression of Smooth Muscle-Myosin Heavy Chain (SM-MHC), Caldesmon (CALD1), Tropomyosin (TPM1) and Smooth Muscle Gamma-Actin (SM-ACTG2) in vaginal tissue of (1) premenopausal women with advanced POP compared to premenopausal controls and (2) premenopausal compared to postmenopausal healthy women.

Methods: Caucasian women undergoing total hysterectomy for benign conditions were recruited and divided in 4 groups: premenopausal women with advanced POP and controls, and postmenopausal women with POP and control. We excluded women on hormonal replacement therapy, steroids therapy, previous pelvic surgery and history of connective tissue diseases. During the surgical procedure, 1 cm^2 of full thickness vaginal tissue was obtained from the surgical cuff. The samples were immediately frozen in liquid nitrogen and storage at -80^oC until analysis. Total RNA was extracted using TRIZOL. Real time PCR was performed to quantify mRNA levels of SM-MHC, TPM1, CALD1 and SM-ACTG2.

Results: 37 premenopausal (23 patients and 14 controls) and 17 postmenopausal women (12 POP and 5 controls) were enrolled. In premenopausal group, we could observe that SM-MHC ($p<0.05$), TPM1 ($p<0.05$) and SM-ACTG2 genes were down-regulated in POP patients compared to controls, while CALD1 expression was up-regulated in the POP patients group. SM-MHC and TPM1 were decreased in 6-fold and 4-fold change, respectively, in the POP patients group. We observed that the expression of the four genes: SM-MHC, TPM1, CALD1 and SM-ACTG2 were decreased in postmenopausal compared to premenopausal healthy women. The gene expression of TPM1, CALD1 and SM-ACTG2 were down-regulated after menopause in 7-fold, 4-fold and 7-fold change, being those differences statistically significant ($p<0.05$).

Conclusion: Patients with severe POP showed altered expression of genes regulating the smooth muscle contraction in the vaginal wall tissue. Our preliminary results showed that age-related hormonal status may influence the expression of the SM contractile machinery genes in the vagina of women. This information will help us to understand the physiopathology of some of the pelvic floor dysfunctions affecting women after the menopause.

Funded by the Physicians Services Incorporated Foundation (PSI)

ABSTRACT #P-E2

Pelvic Floor Dysfunction after an Anal Sphincter Tear during Childbirth

David Baud[F](1), Sylvain Meyer (1), Yvan Vial (1), Patrick Hohlfeld (1), Chahin Achtari (1)
(1) Department of Obstetrics and Gynaecology, Lausanne, Switzerland

Objective: To estimate fecal, urinary and sexual symptoms 6 years after an anal sphincter tear.

Methods: From a cohort of 13,213 women who gave birth vaginally of cephalic singleton at term between 1996 and 2006, we identified 196 women who sustained an anal sphincter tear and 588 matched controls. Validated questionnaires grading fecal, urinary incontinence and sexual dysfunction were mailed.

Results: Respectively 66 (33.7%) and 192 (32.7%, p=0.8) women with and without previous anal sphincter tear responded at a median follow up of 6 years. Both groups were identical in term of sociodemographic and obstetric characteristics. Severe fecal incontinence was respectively reported by 15.4% and 6.6% of women with and without anal sphincter tear (p=0.04, RR 2.6, 95%CI 1.1-6.3). Urinary incontinence and sexual dysfunction were frequently reported in both groups. Women with an anal sphincter tear had no increased risk of urinary incontinence (37.9% versus 31.1%, p=0.361), but significantly reported more pain, difficulties to lubrificate and to reach orgasm than controls. Severe sexual dysfunction did not differ between both groups (31.3% versus 28.6%, p=0.754). A posterior fetal head presentation during childbirth was a strong independent risk factor for both severe urinary incontinence (p=0.042, RR 2.18, 95%CI 1.03-4.62) and severe sexual dysfunction (p=0.012, RR 2.81, 95%CI 1.26-
6.31).

Conclusions: Anal incontinence six years postpartum is strongly associated with an anal sphincter tear. Urinary incontinence and sexual dysfunction need further investigations in this setting. A posterior fetal head presentation during childbirth represents a major risk factor for both urinary incontinence and sexual dysfunction.

ABSTRACT #P-E3

A Randomized Trial of the Uresta Continence Device: Short Term Uresta Efficacy Study ("Sure" Study) (Work-in-Progress)

Carolyn Best [F](1), Phaedra Diamond [F](1), May Alarab(1), Harold P. Drutz (1), Danny Lovatsis (1).
(1) Urogynaecology Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital

Objective: To determine the short-term efficacy of the Uresta intra-vaginal device in reducing the loss of urine due to stress incontinence.

Methods: A randomized controlled trial was conducted among women with urodynamically proven stress urinary incontinence (SUI) from the Urogynecology unit at Mount Sinai Hospital. Women with urinary urgency, previous incontinence procedures, significant pelvic organ prolapse (POP) or a post-void residual greater than 100mls were excluded. Ethics approval from Mount Sinai Hospital was obtained. Following informed written consent, participants were randomized to receive either the Uresta device, or a placebo vaginal silastic ring for the duration of a pad test. The pad test includes five repetitions of the following activities with a bladder filled to 300mls: coughing, step climbing, heel bounce, standing from a seated position and walking 50 yards. Pad tests were performed before and after device placement, with the amount of urine leakage determined by pad weight. The primary outcome was the achievement of a 50% reduction in pad weight before and after device placement, compared between the two groups. This figure of a 50% reduction was obtained from a single-arm cohort study by Farrell, where pad weight decreased by an average of 55% using the Uresta device. Using a chi-square test, 2-tailed alpha of 0,05, power of 0.8, and a prediction that 75% of the Uresta group will obtained the desired reduction in pad weight, and only 25% of the placebo group will have such a reduction, the required sample size is 18 women per group. Due to the small numbers, the Fisher exact test was used to analyze the preliminary data.

Results: Recruitment began in February 2011 and is ongoing. Nine women have been randomized thus far, 3 to the Uresta group, and 6 to the placebo group. So far the two groups are similar in age, parity and menopausal status. Two out of the 3 women in the Uresta group obtained a reduction in urine leakage of over 50%, with both being completely dry during the pad test after Uresta fitting. None of the placebo group achieved a reduction in urine loss over 50%. The data collected to date indicate a trend towards a greater likelihood of urine leakage reduction (by 50% or more) with the Uresta device compared to placebo (p=0.083).

Conclusions: Early preliminary results suggest that the Uresta intra-vaginal device may be effective in reducing urine loss from stress incontinence.

Funded by: Mount Sinai Hospital/UHN Department of Obstetrics & Gynaecology Research Fund

ABSTRACT #P-E4

The Prevalence of Detrusor Overactivity amongst Patients with Symptoms of Overactive Bladder: A Retrospective Cohort Study.

Phaedra Diamond[F](1), Seham Hassonah[F](1), Harold Drutz(1).
(1)Urogynaecology Division, Department of Obstetrics and Gynaecology, Mount Sinai Hospital

Objective: The aim of this study is to determine what proportion of the population presenting for urogynecologic assessment with symptoms of overactive bladder (OAB) have urodynamic evidence of detrusor overactivity. We hypothesize that the prevalence of detrusor overactivity will be low.

Methods: This is a retrospective cohort study with institutional ethics approval. Charts from consecutive new patient referrals were reviewed from Jan 2011 backward. Patients with urgency, frequency and nocturia, with or without incontinence were included in the study. Patients with prolapse at or beyond the hymen (grade 3 or 4) or with significant post void residual (>100cc) were excluded. Data collected included results of urodynamic testing (presence or absence of detrusor overactivity), age, parity, height, weight, degree of prolapse, results of routine laboratory testing and current medications. The primary outcome was the presence of detrusor overactivity on urodynamics.

Results: Data collection is in progress. An updated abstract with results will be provided prior to presentation.

Conclusions: Pending.

Funded by: N/A

ABSTRACT #P-E5

Rate of Stress Urinary Incontinence in the Six Month Follow-Up in Patients Who Underwent Laparoscopic Sacrocolpopexy Surgery without Preoperative Symptoms or Diagnosis of Occult Stress Urinary Incontinenece, and No Concomitant SUI Surgery. (Work-in-Progress)

Noushin Khoshbakht [R], Danny Lovatsis
Division of Urogynaecology, Department of Obstetrics & Gynaecology, Mount Sinai Hospital.

Objective: In this study we are trying to demonstrate the rate of SUI six months follow up in patients who underwent sacrocolpopexy surgery without preoperative symptoms or diagnosis of occult stress urinary incontinence, and no concomitant SUI surgery. The clinical practice at Mount Sinai Hospital does not follow the recommendations of the CARE study because it is felt that the rate is much less than 60%, and this is to be determined by the proposed study.

Method: This study is intended to be a chart review of the women who underwent laparoscopic sacrocolpopexy in the last five years from the Urogynecology Department at Mount Sinai Hospital.

OUTCOME MEASURES: The primary outcome measure is stress continence at six months and patients will be categorized as stress continent or stress incontinent on the basis of symptom assessment and stress testing.
Secondary Outcomes include complications at surgery, lower urinary tract complications (overactive bladder, urinary retention, and urinary tract infection), effect of the intervention on bowel function and painful intercourse.

Relevance: There is a study which reveals Two-year outcomes after sacrocolpopexy for post-hyesterectomy vault with and without Burch procedure (surgical treatment for stress urinary incontinence) to prevent stress urinary incontinence. In the Colpopexy and Urinary Reduction Efforts (CARE) trial, subjectively stress-continent women undergoing sacrocolpopexy were randomized to receive or not receive a Burch colposuspension.

ABSTRACT #P-E6

Predictors of Length of Hospital Stay after Vaginal Hysterectomy

Mara Sobel [R], Stacey Grossman, Patricia Lee
Department of Obstetrics & Gynaecology, Division of Urogynaecology, Sunnybrook Hospital, Toronto, Ontario

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

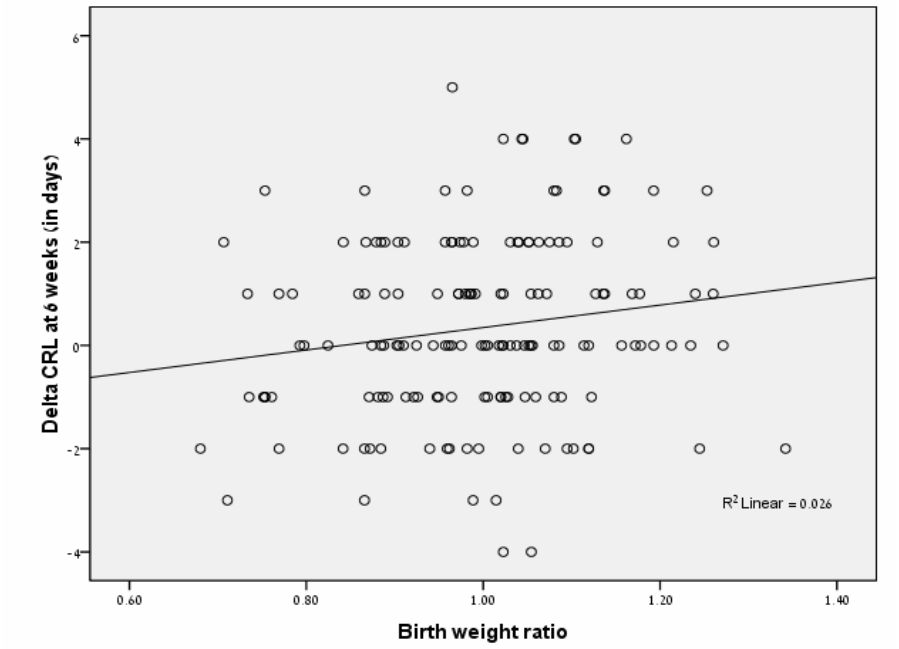
ABSTRACT #P-F1

Does First Trimester Crown-Rump Length Predict Term Birthweight?

Rinat Hackmon(F)(1, 2), Cliff Librach(3) Ilan Matok(4), Ian Cho(5), Nicole Rodrigues(5), Stephanie Grover(3), Joel Ray(1), Howard Berger(1)
(1)High-Risk Pregnancy Division, Department of Obstetrics & Gynaecology, St Michael's Hospital, (2)Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3) Departments of Obstetrics and Gynaecology, Sunnybrook Health Sciences Centre and Women's College Hospital, University of Toronto, (4) Division of Clinical Pharmacology and Toxicology, Hospital for Sick Children, (5) Faculty of Arts and Science, University of Toronto

Objective: Traditionally, physiologic variation in fetal weight is believed to emerge during the latter half of pregnancy. However, recent evidence has suggested a correlation between crown-rump length (CRL) at 11-13 weeks´ gestation and abnormal fetal growth. These studies, though, have been limited by an inability to accurately confirm the date of conception. Therefore, we sought to determine the association between CRL and term birth weight (BW) in pregnancies where date of conception is precisely known.
Methods: This cohort retrospective study (work in progress) includes 159 term, singleton pregnancies in women who had undergone In Vitro Fertilization (IVF) for conception,. All pregnancies underwent viability 1st trimester ultrasounds and subsequent nuchal translucency (NT) screening at 11–14 weeks' gestation. Pregnancies were dated by the exact date of fertilization. The difference between the measured and the expected CRL was calculated and correlated to actual term birthweight.
Results: The difference between measured and expected CRL, expressed in days of gestation, at mid-1st trimester correlated with BW at delivery (r=0.16, r^2=0.026, P =0.043) *Figure 1*
Conclusion: Our preliminary findings, in this well defined population, confirm recently published studies which suggest that f that suggest that physiologic variation in birth weight can be reflected by first trimester CRL.

Figure 1



ABSTRACT #P-F2

A Descriptive Analysis of a Large Cohort of HIV-Positive Pregnant Women at One Canadian Urban Hospital

Daniela Caprara [R](1), Rajiv Shah (2), Jay MacGillivray (2), Mark H. Yudin (2).
(1) Department of Obstetrics and Gynaecology, University of Toronto, (2) Department of Obstetrics and Gynaecology, St.Michael's Hospital.

Objective: To review the experience of one Canadian urban hospital in the management and outcomes of HIV-positive pregnant women over a ten-year period.

Study Methods: Retrospective chart review of all HIV-positive pregnant women delivered at St.Michael's Hospital in Toronto from March 2000 - March 2010. Demographic, pregnancy, and intrapartum data was collected and analyzed.

Results: During the study period, 75 pregnancies occurred in 65 women. Data collection is ongoing and there are an estimated 145 pregnancies in our cohort. An increasing number of women were seen over time with 68% (n=49) of cases in care from 2007 to 2010. The mean age was 31.2 (range 16 to 41). The majority of women were of African descent with recent immigration to Canada. Only 5% (n=3) reported illicit drug use in their current pregnancy. Although the majority of women had a known diagnosis of HIV prior to pregnancy, 16 (24%) were diagnosed on antepartum testing. Most women were compliant with their HARRT and had undetectable viral loads documented at time of delivery. Mean gestational age at delivery was 38.2 weeks (range 16 to 41.4). Mode of delivery included 40 vaginal deliveries (1 vacuum) and 28 Cesaerean sections. All neonates received AZT after delivery. There were no cases of vertical HIV transmission.

Conclusions: We have seen increasing numbers of HIV-positive pregnant women over the past ten years. The majority of these women are healthy with well-managed disease, and have favourable pregnancy outcomes. There were no infected children born during the study period.

ABSTRACT #P-F3

Duration of Rupture of Membranes and Risk of Fetal Transmission of HIV in Optimally Managed HIV Positive Mothers: Experience at Two Academic Centres.

Siobhan Mark [R] (1), Kellie Murphy (2), Stan Read (3), Ari Bitnun (3), Mark Yudin (4).
(1)University of Toronto, Department of Obstetrics and Gynaecology, (2)Maternal-Fetal Medicine Division, Department of Obstetrics and Gynaecology, Mount Sinai Hospital, (3)Division of Infectious Disease, The Hospital for Sick Children, (4)Department of Obstetrics and Gynaecology, St.Michael's Hospital.

Objectives: To examine the impact of length of time of ruptured membranes on vertical transmission of HIV in optimally managed HIV-positive women with low viral loads on highly active antiretroviral therapy (HAART).

Methods: A retrospective cohort study of all HIV-positive women who delivered at Mount Sinai and St.Michael's Hospitals in Toronto from January 2000-November 2010.

Results: Two hundred and ten HIV-positive women delivered during the study period. The mean age was 32. The ethnic background was known for 202 patients of which 135 (67%) were of African descent. Gestational age was >37 weeks for 177 (84%) patients at the time of delivery. During labour, 179 (85%) patients received adequate intrapartum intravenous zidovudine, and viral load was undetectable (<50 copies/mL) for 167 (80%). There were almost equal numbers of women who had a vaginal delivery (107, 51%) and a Cesarean Section (103, 49%). The mean length of time of rupture of membranes was 4.18 hours for the entire group, and 5.42 hours for women who had a vaginal delivery. When controlling for those ruptured less than 3 minutes (ie scheduled cesarean sections), the mean length of time of rupture of membranes was 6.23 hours. During the study period, there were no children born HIV-positive.

Conclusions: No HIV-positive children were born during the last ten years in a cohort of 210 virally suppressed HIV-positive pregnant women. In women with low viral loads, increasing length of time of ruptured membranes did not increase the likelihood of vertical transmission. Our experience suggests that length of time of rupture of membranes does not influence risk of maternal-fetal transmission of HIV in optimally managed women.

ABSTRACT #P-F4

Characteristics and Surgical Success in Patients Presenting for Repair of Obstetric Fistula in Western Kenya: A Retrospective Case Series

Lesley Hawkins [M] (1), Rachel Spitzer (2), Astrid Christoffersen-Deb (2,3) and Hillary Mabeya (3). (1) Faculty of Medicine and (2) Department of Obstetrics and Gynaecology, University of Toronto, Ontario, Canada; (3) Department of Reproductive Health, Moi University, Eldoret, Kenya

Introduction: Fistulae involving the female genital tract cause significant morbidity to women in resource poor countries. Obstetric fistula (OF) is caused by prolonged obstructed labour in conjunction with lack of access to emergency obstetric care. The impacted fetus causes widespread vascular injury and tissue necrosis, resulting in the formation of vesicovaginal and/or rectovaginal fistula (VVF or RVF). Operative repair is the established course of management for OF. There remains a need to better understand the characteristics of patients and determinants of successful surgical repair in order to improve approaches to prevention and treatment of OF in the Kenyan context.

Objective: To carry out a large scale retrospective case series of patients who have undergone surgical repair of OF in western Kenya.

Methods: Patient records of 483 surgical repairs of OF treated by the Principal Investigator (HM) between January 1996 and July 2010 at four medical centres in western Kenya were retrospectively reviewed. A standard data collection tool was used.

Results: Median age of fistula development was 20 (IQR = 7) years of age. Median age at presentation for surgical repair was 22 (IQR = 11) years of age. The majority of patients developed fistula as a result of their first delivery (56%). Median duration of obstructed labour leading to fistula creation was 48 (IQR = 48) hours. Success of closure was 86% in first time VVF repairs and 67% in first time combined VVF and RVF repairs. 73% and 50% of fistulas were repaired successfully in previously attempted VVF and combined VVF and RVF repairs, respectively. First time repair attempt was found to have a significant relationship with VVF surgical success, when compared to patients with a history of previous attempt(s) ($p = 0.027$). Further statistical analysis is pending.

Conclusions: Trends in patient characteristics describe young women with little or no education and prolonged labour of their first delivery resulting in fistula formation. Characteristics of this population are comparable to those reported in the literature from other countries in sub-Saharan Africa. This case series is the largest known study of its kind to report on surgical repair of OF in Kenya.

Funded by: Centre for International Health scholarship from the Medical Alumni Association of the University of Toronto, with additional funding provided by the Comprehensive Research Experience for Medical Students (CREMS).

ABSTRACT #P-F5

Acceptability and Feasibility of Point of Care HIV Testing on the Labour and Delivery Unit during Early Labour

Salikah Iqbal, [R](1) Mark Yudin, MD (2), Leanne De Souza (3)
(1)University of Toronto, (2) St Michael's Hospital, Obstetrics, Gynecology and Reproductive Infectious Disease

Introduction: Canadian women are offered HIV testing early during prenatal care. Women who do not receive adequate prenatal care are at an increased risk for HIV infection. There is an opportunity to screen for HIV while patients are in labour in order to provide immediate provision of antiretroviral prophylaxis and to minimize the rate of vertical transmission. Health Canada recently approved a Rapid HIV test for use in Point of Care settings. The 60-second test has shown to be equivalent in performance to laboratory HIV screening tests. Despite its potential, it is unclear whether the HIV screening test would be acceptable to patients. The present study is designed to evaluate attitudes and expectations surrounding rapid HIV testing in labour.

Objective: We will assess patient acceptance of rapid HIV testing in labour, and willingness to receive HIV counselling and antiretroviral therapy.

Methods: An anonymous survey will be used to capture information about patient demographics, willingness to undergo HIV screeening while in labour, and attitudes toward HIV testing. All women presenting to Labour and Delivery at St. Michael's Hospital, Toronto, who are in early labour will be approached for participation in the study. A convenience sample of 150 women will be enrolled in the study. The survey will be administered in triage or in a labour room. Rapid HIV testing will *not* be performed.

Results: The anonymous surveys will be collected from April 2011 – October 2011. Data collection and analysis will take place from November 2011 – January 2012.

Conclusion: In progress.

ABSTRACT #P-G1

Pathologic Basis of Echogenic Cystic Lesions in the Human Placenta: Role of Ultrasound-Guided Wire Localization

Leslie K Proctor [M] (1), WL Whittle (2), S Keating (3), S Viero (3) and JCP Kingdom (2)
(1) Faculty of Medicine, (2) Maternal-Fetal Medicine Division, Department of Obstetrics & Gynecology, Mount Sinai Hospital, (3) Laboratory Medicine and Pathobiology, Mount Sinai Hospital, University of Toronto.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-G2

Pro-Inflammatory Cytokines Inhibit Multidrug Resistance in the Developing Blood-Brain Barrier

Majid Iqbal[G](1), Hay Lam Ho(1), William Gibb (4,5), Stephen G. Matthews (1,2,3). Departments of (1)Physiology, (2)Obstetrics and Gynecology, and (3)Medicine, Faculty of Medicine, University of Toronto. Department of (4)Obstetrics and Gynecology and (5)Cellular and Molecular Medicine, University of Ottawa.

Objective: Phosphoglycoprotein (P-gp) extrudes a wide range of endogenous and exogenous (chemotherapeutics) substrates from cells. P-gp expression in microvessels of the fetal guinea pig brain increases dramatically towards term and into the early postnatal period. This coincides with a decline in protection provided by placental P-gp. During this period the developing brain is susceptible to drugs and teratogens. Pro-inflammatory cytokines, produced in response to infection, are potent inhibitors of P-gp function in the liver. It is currently unknown whether cytokines can affect P-gp function in brain endothelial cells (BECs), which form the primary blood-brain barrier (BBB), during development. Studies were initiated using cells derived from 14-day-old guinea pigs to establish a BEC model, in which to investigate regulation of P-gp function during fetal and neonatal development. We hypothesized that pro-inflammatory cytokines inhibit P-gp function in BECs.

Methods: Primary BEC cultures were established from 14-day old guinea pigs. Confluent cultures were treated with varying doses (10^0-10^4 pg/mL) of interleukin-1β (IL-1β), interleukin-6 (IL-6), and tumor necrosis factor α (TNF-α) for 1, 4 or 24h. Cells were then incubated for 1h with calcein-AM (1μM; P-gp substrate). Accumulation of fluorescent calcein was measured to determine relative changes in P-gp function with each treatment.

Results: IL-1β significantly reduced P-gp function (increased cellular calcein accumulation) at 1, 4 and 24h in BECs ($P<0.01$). Treatment with IL-6 significantly decreased P-gp function at 4 and 24h ($P<0.05$), with no effect at 1h. TNF-α treatment resulted in a significant decrease in P-gp activity at 24h ($P<0.05$), with no effect at 1 and 4h. Calcein accumulation was increased by 36, 76 and 55% following treatment with IL-1β, IL-6 and TNF-α, respectively.

Conclusions: Pro-inflammatory cytokines potently inhibit P-gp function in BECs. Given that fetal protection by the placenta decreases towards term, the fetal BBB becomes important for brain protection in late gestation. Our data suggest that in pregnancies complicated by maternal or intra-amniotic infection, the fetal BBB may be less effective in preventing drugs and teratogens present in the maternal and fetal circulations from entering the fetal brain.

Funded by: Canadian Institutes of Health Research.

ABSTRACT #P-G3

Role of Placental VEGFA in Maternal Function during Pregnancy

Han Li[G](1)(2)(3), Dawei Qu(1), Hoonki Sung(1), Andras Nagy(1)(4) and S Lee Adamson, (1)(2)(3).
(1)Samuel Lunenfeld Research Institute, Mount Sinai Hospital; (2)Physiology, University of Toronto; (3)Obstetrics and Gynecology, University of Toronto and (4)Molecular Genetics, University of Toronto.

Objectives: Maternal circulating VEGFA increases during pregnancy however its source and function are largely unknown. VEGFA is expressed in placenta. In mice, Vegfa mRNA is highest in the placental spongiotrophoblast layer (SP) which is perfused by blood returning to the maternal circulation. We hypothesized that the SP is a source of maternal plasma VEGFA and knocking out one allele of Vegfa in the SP (SP-*Vegfa*$^{+/-}$) of every placenta would affect maternal function during pregnancy. Our objective is to determine whether spongiotrophoblast VEGF-A is required for placental vascularization, maternal and placental hemodynamics during pregnancy.

Methods: To obtain dams carrying SP-*Vegfa*+/-placentas, we bred homozygous *Vegf-loxP* females with homozygous *Tpbpa-Cre* males (*Tpbp* is SP-specific). For controls, we bred *Vegf-loxP* females with wild type males. At 17.5d (i.e. near term), we measured maternal circulating VEGFA by ELISA (n=9 per group). We also measured maternal arterial pressure using a catheter (n=6), maternal cardiac output (CO) with ultrasound, protein, red blood cells and glucose in maternal urine using test strips, and assessed litter size, and fetal body weight (all n=11).

Results: Contrary to our hypothesis, VEGFA in maternal circulation was 25% higher in dams carrying SP-*Vegfa*+/-placentas (560±20pg/ml vs. 450±30pg/ml, $p < 0.05$). Interestingly, maternal arterial pressure was significantly decreased in these mice (62±3mmHg vs. 78±1mmHg, $p < 0.05$) while CO was unaltered suggesting lower peripheral vascular resistance. Hematuria was found in 6 of 11 experimental mice and in 0 of 9 controls ($p < 0.05$) with no other abnormalities in maternal urine. Nevertheless, litter size and fetal weights did not differ between groups.

Conclusions: The paradoxical increase in VEGFA in maternal plasma may cause vasodilation and thereby play a role in the decrease in peripheral vascular resistance in dams carrying SP-*Vegfa*+/-placentas. Although the mechanisms remain to be defined, results suggest that placental-JZ VEGFA is important in maternal function during pregnancy.

Funded by*: CIHR MOP-93618.*

ABSTRACT #P-G4

Selective Serotonin Reuptake Inhibitors (SSRIs) Modify Drug Resistance in the Placenta and at the Fetal Blood-Brain Barrier

Manzerul Bhuiyan[G](1), Sophie Petropoulos(1), William Gibb(4, 5), Stephen Matthews(1, 2, 3). (1)Departments of Physiology, (2)Obstetrics and Gynaecology, and (3)Medicine, University of Toronto, (4)Departments of Obstetrics and Gynaecology, and (5) Cellular and Molecular Medicine, University of Ottawa, Ottawa.

Objectives: P-glycoprotein (P-gp) is a member of the ATP-binding cassette (ABC) superfamily. It is expressed at high levels in the placental syncytiotrophoblast and prevents xenobiotics present in the maternal circulation from entering the fetus. In cancer cells, P-gp is inhibited by selective serotonin reuptake inhibitors (SSRIs), which results in increased intracellular accumulation of P-gp substrates. We have previously shown that SSRIs can modulate P-gp mediated drug transport in endothelial cells in the brain microvasculature. In this study, we hypothesized that the SSRI sertraline would decrease P-gp activity thereby increasing drug transfer from the mother to the fetus (placenta) and into the fetal brain (fetal blood-brain barrier, BBB).

Methods: At embryonic day 15.5, pregnant FVB mice were injected with: 1) sertraline (10mg/kg) and [^{3}H]digoxin (1μCi/30g), 2) sertraline (1mg/kg) and [^{3}H]digoxin, or 3) vehicle and [^{3}H]digoxin. Digoxin is an effective marker of P-gp mediated drug transfer. Animals were euthanized 5, 60 or 240mins after injection in order to determine the time course of effect. Half of the fetuses in each litter were left intact with fetal membranes and amniotic fluid (to assess total transplacental drug transfer), and half were dissected for determining drug transfer into the fetal brain. Maternal blood was also collected. Drug ratios were then determined.

Results: At 5 and 60min, there were no differences in placental or fetal BBB drug transfer. However, in animals euthanized 240 minutes after injection, both doses of sertraline produced a significant decrease in fetal digoxin accumulation and a significant increase in fetal brain digoxin accumulation.

Conclusions: This study presents the novel findings that sertraline (4h exposure) increases placental P-gp activity, resulting in decreased drug transfer to the fetus, at the same time as it decreases P-gp activity in the fetal BBB, resulting in increased drug transfer into the fetal brain. This suggests that P-gp regulation by the SSRIs is tissue specific. These findings have important clinical implications with respect to fetal protection during maternal drug therapy in pregnancy.

Funded by: Canadian Institutes for Health Research

ABSTRACT #P-G5

Pregnancy Outcomes in Women with Elevated Levels of Fetal Hemoglobin

Ally Murji [R](1), Mara Sobel(1), Lara Hasan(1), Anne McLeod(2), John Waye(3), Mathew Sermer(4), Howard Berger(5)
(1)Department of Obstetrics & Gynaecology, University of Toronto; (2)Department of Hematology, Mount Sinai Hospital; (3)Molecular Diagnostic Genetics, Hamilton Health Sciences, McMaster University; (4) Maternal-Fetal Medicine Division, Department of Obstetrics & Gynecology, Mount Sinai Hospital and (5) St Michael's Hospital.

ABSTRACT AVAILABLE IN HARDCOPY VERSION ONLY

ABSTRACT #P-H1

Mechanical Stretch Induces the Release of Pro-Inflammatory Cytokines in Human Myometrial Smooth Muscle Cells.

Yu-Hui Lee[G](1), Oksana Shynolva(3), Stephen Lye(1,2,3).
Departments of (1)Physiology and (2)Obstetrics and Gynaecology, University of Toronto;
(3)Samuel Lunenfeld Research Institute, Mount Sinai Hospital.

Objective: It is widely accepted that inflammation is implicated in human parturition. Spontaneous labour at term was found to be associated with leukocyte invasion, increased cytokine production and adhesion molecule expression. Massive infiltration of leukocytes, specifically, macrophages and neutrophils, was observed in the term myometrium of pregnant women in the absence of infection, suggesting their involvement in normal parturition. We previously showed the ability of MCP-1 synthesis by rat myometrial smooth muscle cells (SMCs) *in vivo* during gestation and that its expression was significantly up-regulated prior to and during labour. Secondly, using unilateral pregnant rat model we demonstrated the association between the increased production of MCP-1 protein in term myometrium and uterine occupancy, suggesting that mechanical signals regulate expression of this chemokine and the initiation of labor *in vivo*. This increase in MCP-1 was also accompanied with an influx of macrophages in the myometrium. It was thought that cytokines and adhesion molecules might mediate this event. We **hypothesize** that 1) mechanical stretch would induce pro-inflammatory cytokine secretion by human myometrial SMCs and, 2) these cytokines would facilitate macrophage and neutrophil transendothelial migration (TEM) into the myometrium via upregulation of adhesion molecules and/or enhancement in their migratory characteristics.

Methods: Human myometrial SMC line hTERT-HM were plated on flexible-bottomed culture plates coated with collagen I and subjected to a static stretch for 8 and 24 hours using the Flexcell5 strain unit (Flexcell International Corp.). Cell culture supernatant (n=4) was collected and analyzed with Bio-Plex 27-plex and 21-plex human cytokine assays (Bio-Rad). With the identified cytokines, we performed TEM assay using human uterine myometrial microvascular endothelial cell line (UtMVEC-Myo) seeded onto 3-μm transwell inserts in 24-well plates to investigate if stretch-induced cytokines could promote the TEM of primary human neutrophils.

Results: Preliminary Bio-Plex screen revealed a prioritized list of cytokines (VEGF, RANTES, G-CSF, IL-8, IL-10, IL-12(p70), TNF-β) whose levels were significantly elevated upon 24-hour mechanical stretch. Similar trend in the expression was observed for other candidate cytokines (MCP-1, GRO-α, IL-6). Preliminary TEM assay showed significant increase in neutrophil migration toward IL-8 and GRO-α stimuli in comparison to negative control.

Conclusion: Our preliminary results support the hypothesis that mechanical stretch is capable to induce cytokine expression that can facilitate the entry of peripheral leukocytes into the myometrium. Increasing number of stretch experiments and the development of transmigration assays are in progress.

Funded by: Canadian Institute for Health Research - MOP- 37775

ABSTRACT #P-H2

Characterization of Myometrial Cytokine Expression and Leukocyte Infiltration during Term and Preterm Labour

Tamara Nedd-Roderique[G](1,2), Oksana Shynlova(1), Anna Dorogin(1) and Stephen Lye(1,2,3) (1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital; (2) Departments of Physiology, and (3) Obstetrics & Gynaecology, University of Toronto.

Objective: Previous studies in rat have shown increased expression of uterine cytokines prior to the onset of term labor in association with myometrial/decidual infiltration of peripheral leukocytes (PLs). We hypothesize that PLs are recruited to uterine tissues by locally produced cytokines where they contribute to the initiation of term and preterm labour (PTL). In this study we characterize leukocyte infiltration in the mouse uterus, (1) throughout normal gestation, during term labour (TL) and post-partum (PP), (2) during lipopolysaccharide (LPS)-induced PTL and (3) during RU486-induced PTL. We also investigate the mechanism by which PLs are recruited to uterine tissues during labour by analyzing the cytokine profile in all models.

Methods: Pregnant CD-1 mice were euthanized on gestational day (d) 15, 17, 18.5, 19.75 (prior to labour), TL and PP. On d15 of gestation pregnant CD-1 mice were injected with RU486 (0.15mg, sc, n=15), LPS (0.125mg, intra-uterine, n=15) or vehicle (n=10/group). Animals were euthanized during PTL or 24 hours post injection/surgery. One whole uterine horn (myometrium and decidua) was used for immunohistochemical analysis. Immunolocalization of macrophages and neutrophils was defined using newCast stereology software with systematic randomized sampling of 1-2% of the total myometrial area. Myometrium from the second uterine horn was used for biochemical analysis by Bio-Plex Pro Mouse cytokine 23-plex assay (BioRad) and FACS analysis.

Results: Specific antibodies were used to compare the level of monocyte (Ly6 G/C), macrophage (F4/80) and neutrophil (7/4) infiltration into the myometrium. Quantitative stereologic analysis suggests that there is a significant increase in macrophages prior to the onset of labour, while neutrophils increase post partum. Neither macrophages nor neutrophils infiltrated the myometrium during RU486-induced PTL, however neutrophils infiltrate the myometrium during LPS-induced PTL. FACS analysis of the myometrium shows that neutrophils and macrophages were increased during TL, PP and LPS-induced PTL, but not during RU486-induced PTL. These changes in leukocyte number were associated with significant changes in multiple cytokines in the myometrium during TL and PTL compared to d15 or corresponding vehicle controls.

Conclusions: Our findings suggest that different mechanisms underlie LPS- and RU486-induced PTL with differential cytokine expression dictating leukocyte infiltration. These results support the role of immune cells not only in uterine activation leading to TL and PTL, but also in the process by which the uterus returns to its pre-pregnant state during the PP period.

Funded by: March of Dimes

ABSTRACT #P-H3

A Cytokine Signature Associated with the Onset of Term and Preterm Labour

Oksana Shynlova [O](1), Sally Sabra (1,3), Stephen Lye(1,2,3)
(1) Samuel Lunenfeld Res Institute, Mt Sinai Hospital, (2) Departments of Physiology, and (3) Obstetrics/ Gynecology, University of Toronto

Objective: It is hypothesized that in pre-term labor (PTL), infection or other factors result in the release of pro-inflammatory cytokines which stimulate metalloproteases and prostaglandin synthesis, resulting in uterine contractions, cervical ripening, and rupture of fetal membranes. Several cytokines and chemokines have been implicated in the pathogenesis of PTL. We hypothesized that physiological parturition and PTL will be associated with a specific signature of cytokines in maternal plasma**.** Our objective was to compare the levels of multiple cytokines/chemokines in maternal plasma 1) between term non-laboring and spontaneous laboring women and 2) between preterm laboring women and healthy pregnant women matched for gestational age.

Methods: The Institutional human Research Ethics Board of Mount Sinai Hospital, Toronto approved this study. Peripheral blood was collected from pregnant and laboring patients; women with medically indicated preterm delivery and intrauterine infection (chorioamnionitis) were excluded from the study. A panel of 48 cytokines was assessed using Human Cytokine 27-plex and 21-plex immunoassay (BioRad) in maternal plasma collected from 1) women experiencing idiopathic PTL (24-32 weeks of gestation, n=10); 2) healthy pregnant women matched for gestational age, PTNIL (24-32 weeks, n=10); 3) women in active term labour, TL (n=10), 4) pregnant term women not in labour, TNIL (36-40 weeks, n=10).

Results: (1) 28 cytokines were detected in plasma from pregnant women. (2) In term patients IL6 and M-CSF plasma levels were significantly higher in the term laboring group compared to the term non-laboring women (TL vs TNIL, $p=0.002$ and $p=0.018$, correspondingly). (3) Five cytokines were significantly up-regulated in the preterm laboring group compared to preterm patients not in labor matched for gestational age (PTL vs PTNIL, $p<0.05$ for all): IL6, GROα, HGF, MIF and CTACK; IL8 and M-CSF were up-regulated, however not significantly; (4) No significant differences were detected in plasma cytokine levels of IL6, IL8, M-CSF, MIF and HGF between preterm and term pregnant women not in labor (PTNIL vs TNIL). We detected however that level of GROa increases, whereas level of INFg decreases in plasma from TNIL women.

Conclusions: We detected increased levels of a specific pro-inflammatory cytokines among women in both PTL and TL suggesting their involvement in the labour process. IL6 was the unique cytokine that was highly increased in plasma from both preterm and term laboring patients ($p=0.002$ and $p<0.001$). Our results raise the possibility that specific cytokine signature we discovered in maternal plasma may be predictive of labour onset.

Funded by: MOD (grant # 21-FY10-204)

ABSTRACT #P-H4

Immunophenotyping of Maternal Peripheral Blood Detects Activated Leukocyte Subpopulations Associated with Preterm Labour.

Sally Sabra [F](1,2,4), Oksana Shynlova (1), Stephen Lye (1,2,3),
(1) Samuel Lunenfeld Res Inst, Mt Sinai Hospital, Department (2)of Ob/Gyn; (3) Physiology and (4) IMS, University of Toronto.

Objective: We provided evidence that in rodents the onset of labour is associated with a physiologic inflammation within the myometrium as a result of activation and targeting of peripheral leukocytes to the myometrium. In this study we used fluorescent activated cell sorting (FACS) to immunophenotype peripheral blood cells from pregnant women to determine whether a subpopulation of activated leukocytes may be detected in association with the onset of labor.

Methods: We collected peripheral blood from healthy pregnant women in the 1st (n=5), 2nd (n=14) and 3rd trimester (n=25). In addition blood was collected from women in active term (TL, n=26) and preterm labor (PTL, n=14) and compared with matched samples from women at term not in labor (TNIL, n=25) and preterm not in labour (PTNIL, n=20). FACS was conducted on the blood samples using monoclonal antibodies recognizing five surface markers (CD55, CD44, CD11b, CD181 and CD192) that define the activation status of the leukocyte subpopulations.

Results: We detected a progressive significant ($P<0.05$) increase in mean fluorescent intensity (MFI) of CD44 on monocytes (M) and lymphocytes (L) across gestation. CD44 MFI was also significantly ($P<0.01$) increased on L of women in PTL compared to PTNIL (2350±290 vs 1530±160). In addition, MFI of CD55 was significantly ($P<0.02$) increased on M and granulocytes (G) from women in labour (PTL and TL) compared to those at matched gestational age NIL (PTL vs PTNIL, M: 3906±480 vs 2700 ±153; G: 2750±140 vs 2046±301).

Discussion: In this novel study we identified activated leukocyte subpopulations that are specifically associated with the onset of labour (term and preterm). CD44 is a cell surface glycoprotein involved in cell-cell interactions, cell adhesion and migration that is predictive of imminent delivery in PTL women. CD55 (Decay Accelerating Factor) is one of three cell surface regulators that protect cells from complement mediated injury. Complement has previously been shown to play central role in the pathogenesis of inflammatory diseases and pathophysiology of pregnancy.

Conclusions: The identification of activated subpopulations of immune cells in peripheral blood of women during labour raise the possibility that preventing the activation of leukocytes may represent a novel therapeutic option for the preterm labouring patients.

Funding: MOD (# 21-FY10-204)

ABSTRACT #P-H5

The Modulation of Androgen Signaling by Steroid Hormones and Mechanical Stretch: A Novel Pathway of Labour Initiation

Yunqing Li[G](1, 2), Oksana Shynlova(1), Xuesen Dong(4) and Stephen J Lye(1,2,3)
(1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, (2) Department of Physiology, University of Toronto, (3) Department of Obs&Gyn, University of Toronto and (4) Prostate Center, University of British Columbia.

While progesterone (P4) is known to play a key role in maintaining pregnancy, androgen has also reported to inhibit spontaneous myometrial contractility in pregnant women. However, little is known about the mechanisms that regulate androgen signaling during gestation. p54nrb is a co-regulator of both androgen and progesterone receptors. We hypothesized that steroid hormones and mechanical stretch of the uterus initiate labour by modulating androgen signaling and the expression of p54nrb**.**

Objective: (1) To study the expression of androgen receptor (AR) in rat myometrium during gestation and at term labour; (2) To investigate the effect of mechanical stretch and steroid hormones on myometrial AR and p54nrb expression; (3) To examine the effects of androgen signaling blockade on p54nrb expression in pregnant rat myometrium.

Methods: We used rat models of (1) pregnancy and term labour, (2) unilateral pregnancy, (3) ovariectomized (OVX) non-pregnant rats primed with estrogen (E2, 10ug/kg, s.c.) and treated with/without P4 (16 mg/kg, s.c.); and (4) rats in late gestation treated with Casodex (AR inhibitor, 100 mg/kg, s.c.). Total protein and mRNA was extracted from rat myometrium and analyzed by real-time PCR and immunoblot.

Results: (1) AR protein was expressed in rat myometrium in early and mid gestation and decreased significantly at term and during labour ($p<0.001$); (2) AR and p54nrb protein expression was significantly lower in gravid uterine horns compared to empty horns in late gestation and during term labour (AR: $p<0.001$ and p54nrb: $p<0.05$); (3) After priming with E2, administration of P4 to OVX rats increased myometrial AR protein expression ($p<0.05$) and p54nrb mRNA expression ($p<0.001$); (4) Blockade of AR signaling by Casodex repressed p54nrb protein expression in pregnant rat myometrium at late gestation ($p<0.01$).

Conclusions: Myometrial expression of AR and p54nrb is regulated by both hormonal and mechanical signals. The decrease in androgen signaling at late gestation may represent a potential mechanism to reduce p54nrb expression and consequently initiate labour.

Funded by: CIHR# 37775 and DO: PREA, MD/PhD Studentship.

ABSTRACT #P-H6

Preterm Premature Rupture of Membranes: What is the Effect of Latency on Neonatal Outcome? (Work-in-Progress)

Julia Kfouri [R](1), Wendy Whittle (2), Shoo Lee (3), Matthew Laskin (4)
(1)University of Toronto, (2)Department of Obstetrics and Gynaecology, University of Toronto, (3)Department of Pediatrics, Mount Sinai Hospital, (4)University of Toronto

Introduction

Preterm premature rupture of membranes (PPROM) complicates 2-3.5% of pregnancies yearly, and is associated with 40% of cases of preterm birth. The etiology of PPROM is multifactorial, although the presence of an intrauterine infection, and the subsequent pro-inflammatory cytokines that are released, likely play a critical role. There is much debate as to the optimal timing of delivery of pregnancies complicated by PPROM. A growing body of evidence has suggested that conservative management prolongs the latency period between rupture of membranes and delivery, but exposes the fetus to a potentially unfavourable intrauterine environment. This possibly increases the risks of neonatal adverse outcomes such as respiratory distress syndrome, bronchopulmonary dysplasia, intraventricular hemorrhage and cerebral palsy.

Objective

To correlate the latency period between PPROM and delivery with neonatal outcome, in order to determine if prolonged latency of >48 hours is associated with an increased risk of adverse neonatal outcome.

Methods

We are retrospectively reviewing the charts of all patients who presented to Mount Sinai Hospital during the time period of 2002 to 2010 with a confirmed diagnosis of PPROM between 24-34 weeks' gestational age, and who subsequently delivered at our institution. The primary outcome is the incidence of neonatal respiratory distress syndrome. Secondary outcomes are clinical chorioamnionitis, grade 3-4 intraventricular hemorrhage, necrotizing enterocolitis, neonatal sepsis, perinatal and neonatal death, and histological evidence of placental chorioamnionitis. Measured co-variates include gestational age at diagnosis of PPROM, presence of cerclage, maternal age, history of preterm birth, or presence of multiple gestations.

Results

This is a work in progress, and we are currently completing the data collection phase of the study.

Conclusions – Pending.

ABSTRACT #P-I1

Don't Throw That Umbilical Cord Away!!: Umbilical Cord Blood Stem Cells in Regenerative Medicine

Shawn Chua [PD], Jennifer Whiteley, Mira Li BSc, Ryszard Bielecki DVM, Ian Rogers.
Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital

Objective: It is estimated that 1 in 3 people will benefit from regenerative medicine based therapy. A good example of this is peripheral vascular disease, which affects 30% of people over 50 years old and is a major complication of type 2 diabetes. Diabetes based PVD cannot be treated by conventional surgical means and is an ideal candidate for stem cell based therapies aimed at repairing and growing new capillaries. For regenerative medicine to be practical it is important to have an easily accessible source of stem cells with high therapeutic potential. Advanced stem cell therapeutics aims to correct tissue and organ defects in a targeted manner by supplying stem cells that will differentiate into the required cells *in situ* or are pre-differentiated *in vitro* before transplantation. Current sources of stem cells include embryonic stem cells, tissue specific stem cells and induced pluripotent stem cells (iPS). Stem cells from umbilical cord blood have the added value over other stem cell sources of being derived from an easily accessible tissue.

Method: Stem cells are isolated from UCB and cultured in serum free medium. The cells are then infused into the injury site of the mouse or rat injury model and assessed for engraftment, survival and differentiation.

Results: We have demonstrated that pluripotential cells derived from umbilical cord blood UCB after a period in culture expresses stem cell genes and is capable of multi-lineage differentiation. Furthermore we have been able to demonstrate cells from Umbilical Cord Blood improve mobility in spinal cord injured rats, improve blood flow in an animal model of hind limb ischemia and are capable of differentiating into insulin secreting β-cells.

Conclusion: UCB stem cells are a safe, easily accessible source of stem cells that can be used in cell therapy based medicine.

Funded by: CIHR-POP1 grants

ABSTRACT #P-I2

Characterization of First-Term Human Umbilical Cord-Derived Perivascular Stem Cells

Seok-Ho Hong*(1), **Anouk-Martine Teichert*[O](1)**, Andree Gauthier-Fisher(1), Shlomit Kenigsberg(1) and Clifford L. Librach(1,2)
(1) CReATe Fertility Centre, Toronto ON Canada ,(2) Department of Obstetrics and Gynecology, University of Toronto, Division of Reproductive Endocrinology and Infertility, Departments of Obstetrics and Gynecology, Sunnybrook Health Sciences Centre and Women's College Hospital.
*Contributed equally to this work.

Human umbilical cord derived mesenchymal stem cells represent a newer source of pluripotent stem cells which have distinct advantages over other sources of mesenchymal cells. We hypothesize that early human umbilical cord-derived perivascular stem cells (ftHUC-PVCs) will be more effective than term human umbilical cord-derived perivascular stem cells counterparts or bone marrow-derived MSCs in regenerative medicine applications. Earlier work on similar cells suggests that ftHUC-PVCs may have greater proliferative capacity, pluripotency, less immunogenecity and secrete beneficial biological molecules; and may have the ability to differentiate into all three germ cell lineages, in particular the cardiac and neural lineages. Our lab has recently isolated 13 lines of first term human umbilical cord-derived perivascular stem cells ranging in age from 8.5 to 12 weeks of gestation and are currently characterizing them. Preliminary flow cytometry (FAC)s data indicates expression of Oct4, SSEA4 and Tra181 is evident in these cells. *In vitro* characterization of the ftHUC-PVCs using FACs, Q-PCR immunocyto and histochemistry is ongoing, and testing the regenerative potential of these cells with *in vivo* models of disease are planned for the future.

ABSTRACT #P-I3

Effect of Sperm DNA Damage on the Functional Ability of Spermatozoa to Penetrate Cervical Mucus

Saajida Bhorat [O](1,2); Naazish Alladin (1, 3), German Videna (1), Ayub Lulat (1), Clifford L. Librach (1, 4, 5); Sergey I. Moskovtsev (1, 5).
(1) CReATe Fertility Center, Toronto, Ontario; (2) Department of Biochemistry, University of Waterloo; (3) Department of Biomedical Sciences, Eastern Virginia Medical School; (4) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre; (5) Department of Obstetrics & Gynaecology, University of Toronto.

Objective: The laboratory evaluation of male infertility remains an essential area of research as almost one third of cases are classified as idiopathic. The clinical value of traditional semen parameters (SP) in the diagnosis of male infertility is controversial. Several additional tests have recently become available in the evaluation of male fertility including: Computer-Aided Sperm Analysis (CASA) defining specific sub-populations of functional spermatozoa with mucus-penetrating kinetics (MPK) and assessment of sperm DNA damage. However the relationship between DNA damage and MPK has not been established.
Methods: Following Institutional Research Ethics Board approval, semen samples from 953 unselected non-azoospermic patients presenting for infertility evaluation from January 2009 to February 2011 underwent CASA and the flow cytometry based DNA Fragmentation Assay expressed as the DNA fragmentation index (DFI). Normal MPK was defined as the subpopulation of spermatozoa with the following kinetic characteristics: average path velocity ≥ 25 μm/s and straightness ≥ 80% and amplitude of lateral head displacement curvilinear velocity between 2.5 μm/s and 7 μm/s. Statistical evaluation was performed with SPSS 19.0 software and results expressed as mean ± SD.
Results: 953 patients ranging from 26 to 62 years of age (39.1± 5.9) were included in the study. DFI ranged from 1.6 to 89.9% (18.9% ± 12.5) and was significantly correlated to patient's age ($r = .238$), sperm concentration ($r = - 0.305$), motility ($r = - 0.577$), and MPK ($r = - 0.350$) ($p < 0.001$). Results of the DFI assessment were subclassified according to the three previously published classification levels; a significant decline in MPK was observed as the DFI level increased ($p < 0.001$): 48% of patients had low DFI (MPK 26.5 ± 26.4); 39% had moderate DFI (MPK 12.4 ± 17.88); while 15% expressed high sperm DNA damage (MPK 6.4 ± 11.7). Sixty percent of patients had normozoospermia, while 40% had an abnormality in one or more of SP. Severity and frequency of high sperm DNA damage (over 30%) increased in relation to the number of abnormalities in the SP. DFI was significantly higher in men older than 45 years old, with a mean DFI of 24.9% ± 14.6 compared to 16.1% ± 10.3 in patients younger than 35 ($p < 0.001$).
Conclusions: Our results confirm that sperm DNA damage is correlated with abnormal semen parameters. This is the first report of a correlation between the functional ability of spermatozoa to penetrate cervical mucus and DFI. Since both CASA-derived MPK and DFI measure different aspects of spermatozoan fecundity potential, both of these tests should be considered in the evaluation of male fertility status. In addition, the degree of DNA damage increases with the number of abnormal parameters and age. The data suggest that the significance of aging on male fertility potential may be underestimated if DNA fragmentation assessment is not part of the clinical workup.

ABSTRACT #P-I4

Expression of a Sperm-Originated Oocyte Activating Factor in Ejaculates of Men Undergoing Fertility Evaluation

Mahmoud Aarabi [O](1); Naazish Alladin (2, 3); Sergey I. Moskovtsev (2, 4); Shlomit Kenigsberg (2); Richard J. Oko (1); Clifford L. Librach (2, 4, 5).
(1) Research Group for Reproduction, Development and Sexual Function, Queen's University; (2) CReATe Fertility Center; (3) Department of Biomedical Sciences, Eastern Virginia Medical School; (4) Department of Obstetrics & Gynaecology, University of Toronto; (5) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Sunnybrook Health Sciences Centre.

Objective: One third male infertility cases remain unexplained. It has been suggested that some cases of infertility may originate from either the absence of expression of, or the incorrect localization of, proteins involved in fertilization. One of the candidate proteins essential for conception is Post Acrosomal Sheath WW domain-binding Protein (PAWP). PAWP is located in the post acrosomal region of the sperm perinuclear theca and is considered to be responsible for oocyte activation and resumption of meiosis after fertilization. In this prospective study, expression of this candidate sperm derived oocyte activating factor was investigated in patients undergoing fertility evaluation.

Methods: Following Institutional Research Ethics Board approval, semen samples from 20 patients were included in the study. The novel method of protein extraction with non-ionic detergent NP40 was employed to dissolve the cell membrane and acrosome. The detergent soluble portion of spermatozoa was compared to the detergent resistant portion for protein localization. An immunoblotting assay was performed using affinity purified antibody against human PAWP to confirm localization and expression of the protein.

Results: As result of this study we have optimized both NP40 extraction and immunoblotting assays using anti-PAWP specific antibody. Localization of protein was evaluated in detergent soluble portion of spermatozoa and compared to detergent resistant portion (nucleus and perinuclear theca). In all twenty samples PAWP was localized in the detergent insoluble portion of extracts. Moreover, lower levels of PAWP expression were detected in five infertile individuals.

Conclusions: Novel non-ionic detergent NP40 is a suitable method of protein extraction from human ejaculates. PAWP was expressed in proper localization of perinuclear theca in all twenty individuals. Low levels of sperm originated oocyte activating factor was present in 25% of a small cohort of men undergoing fertility evaluation. In the next phase of our study, rates of conception, semen parameters and DNA fragmentation will be correlated with the presence and level of expression of PAWP. Our ultimate goal is to develop a novel molecular evaluation methodology for the assessment of sperm functional capacity in men undergoing infertility evaluation and treatment.

ABSTRACT #P-I5

Starvation-Induced Autophagy in Murine Oocytes

Tetyana Yavorska [G](1,2), Andrea Jurisicova (1,2,3).
(1)Department of Physiology, University of Toronto, Canada, (2) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada, (3) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, University of Toronto.

Objective: Age-related reproductive decline and infertility are often linked to accelerated oocyte loss and ovulation of poor quality oocytes. We have previously found that aged oocytes have an increased mitochondrial DNA copy number, as well as increased lysosomal quantity. These findings have led us to hypothesize that defective autophagy might be involved in the pathology of aging. In order to explore the autophagic response in the oocytes, we have developed a new in vitro model that prevents the delivery of essential nutrients from the supporting cumulus cells to the oocyte.

Methods: In order to induce an autophagic response, we used cumulus oocyte complexes (COCs) collected from female mice 44 hours after PMSG injection. The COCs were incubated in αMEM medium alone (Control), or in medium supplemented with 100 μM carbenoxolone (Cbx), a gap junction inhibitor. The oocytes were then stripped of the cumulus cells, and either further incubated or fixed for immunocytochemistry. The former group was incubated with the LysoTracker Red probe to visualize the lysosomal activity and with the MitoTracker Green probe to stain the mitochondria. The fixed oocytes will be used to assess the levels of key autophagic proteins, such as Beclin-1, LC3, and LAMP-2. Both live and fixed oocytes were imaged on a spinning disc confocal microscope and quantitated using Volocity software.

Results: Oocytes treated with Cbx had increased levels of LysoTracker Red staining, suggesting an increase in the number of mature lysosomes. They also displayed a reduced level of MitoTracker Green staining, indicating a reduction in the mitochondrial pool. Both these changes could be reversed with 3-methyladenine, an inhibitor of autophagy, and induced by treatment with rapamycin, an inhibitor of mTOR.

Conclusions: We have successfully used gap junction inhibitors to induce oocyte starvation and have documented changes consistent with autophagy. Studying the process of autophagy and its dysregulation, which has been implicated in somatic aging and numerous diseases, can aide greatly in our understanding of reproductive aging.

Funded by: This work is supported by funding from the Canadian Institutes of Health Research.

ABSTRACT #P-I6

Is There a Correlation Between Sperm DNA Damage (DFI) and a Sperm Kinetic Index (MPI), and Do These Tests Predict Pregnancy Outcome in Couples Undergoing Intrauterine Insemination (IUI)?

Shir Dar [F](1), Naazish Alladin(1), Stephanie Grover, Sergey I. Moskovtsev(1,2), Clifford L Librach(1, 3)
(1)CReATe Fertility Center; (2)Department of Obstetrics & Gynaecology, University of Toronto; (3)Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Sunnybrook Health Sciences Centre.

Introduction: It has been shown previously, that the sperm DNA Fragmentation Index (DFI) correlates with pregnancy outcome after IUI. However, the correlation between Computer Aided Semen Analysis (CASA) derived mucus penetration kinetics index (MPI) and DFI is unknown.

Objective: To determine whether there is a correlation between DFI, and MPI, and whether one or both have any predictive value for subsequent pregnancy outcome after IUI.

Methods: For this retrospective cohort study, semen samples from 23 patients who conceived after IUI were compared to another randomly selected cohort of 23 control patients who did not conceive with IUI. Each patient underwent super-ovulation with IUI. Inclusion criteria were: women under 40 with regular cycles and open tubes. For each sample, an MPI was calculated with an IVOS CASA system (Hamilton Thorne Inc., Beverly, MA). In addition, flow cytometry using Acridine Orange was used to assess sperm DNA damage, expressed as the DFI.

Results: A significant correlation was observed between DFI and MPI ($p<0.004$). There were also significant correlations between DFI and motility ($p <0.004$), and between DFI and sperm concentration ($p <0.03$). In this group of patients, sperm concentration was positively correlated with motility ($p< 0.0001$). Mean MPI was similar in patients who became pregnant compare to non-pregnant (13.5 ± 13.2 vs. 12.8 ± 13.1, $p= 0.9$). In the pregnant couples the mean DFI was lower ($14.4\% \pm 5.4$) compared to non-pregnant ones ($19.3\% \pm 12.9$), however this difference did not reach statistical significance ($p = 0.3$).

Conclusion: We found a significant correlation between MPI and DFI, suggesting a relationship between the kinetics of ejaculated spermatozoa and DNA integrity. The small number of subjects in our pilot study did not give us the statistical power to determine if there a correlation between DFI or MPI and IUI pregnancy outcome.

ABSTRACT #P-J1

Termination of Pregnancy for Fetal Anomalies (Work-in-Progress)

Jing Qin[R](1), Michèle Farrugia(2), Elyse Lackie(3)**.**
(1)Department of Obstetrics and Gynaecology, University of Toronto, (2)Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (3)Department of Obstetrics & Gynaecology, North York General Hospital.

Objective: 1) To examine the practices of Canadian obstetricians for offering and performing termination of pregnancy for management of prenatally diagnosed fetal anomalies. 2) To examine referral and accessibility patterns for termination of pregnancy for prenatally diagnosed fetal anomalies across Canada.

Methods: This will be an online electronic and written survey study distributed to obstetricians and gynecologists on the mailing list of the Society of Obstetricians and Gynaecologists of Canada. Email will be used as the primary mode of distribution. Questions will be in multiple-choice format and be pre-tested amongst a small group of obstetricians and gynecologists for content, clarity, and validity. Responses will be analyzed collectively using descriptive statistics without any unique identifiers.

Results: Pending.

Conclusions: Pending.

ABSTRACT #P-J2

Conservative Management of Cervical Ectopic Pregnancy

Kimberley Garbedian [F], Ally Murji, Barbara Cruickshank
Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Mount Sinai Hospital.

Objective(s): To present a case series and literature review on the etiology, diagnosis, and conservative management of cervical ectopic pregnancy.

Methods: Retrospective review of conservatively managed cervical ectopic pregnancies (n=16) diagnosed at Mount Sinai hospital between January 2002 and March 2011. A database (MEDLINE and Cochrane) search and bibliographic review of relevant literature on the conservative management of cervical ectopic gestations were also conducted. Based on our experience and review of literature we suggest an algorithm outlining an approach to the conservative management of first trimester cervical ectopic gestations.

Results: The incidence of cervical ectopic pregnancy at our institution was 1 in 3,600 live births, representing 3.1% of ectopic pregnancies. The average estimated gestational age was 6.5 weeks. Mean human chorionic gonadotrophin (hCG) on presentation was 27714 (895-81000). Cardiac activity was present in 69% (n=11) of pregnancies. 13% (n=2) of patients required blood products. Mean time to hCG resolution was 32 (5-84) days. 70% (n=12) of patients had at least one known risk factor for ectopic pregnancy and 44% (n=7) of patients had multiple risk factors. Assisted reproductive technology (ART) (56%), history of procedures requiring cervical dilation (38%), tubal surgery (19%), and cesarean section (6%) were risk factors present in our population. Conservative management strategies included: systemic methotrexate (MTX), intra-amniotic KCL/MTX, uterine artery ligation (UAE), cervical artery ligation, and uterine curettage. All 16 cases had successful conservative management, with uterine preservation and maintenance of reproductive capacity.

Conclusion(s): Conservative management of first trimester cervical ectopic pregnancy is safe and effective in hemodynamically stable patients. A treatment algorithm based on clinical, biochemical, and diagnostic findings can aide in the selection of the most effective conservative management strategy.

ABSTRACT #P-J3

MOVED TO E6

ABSTRACT #P-J4

Fertility Treatment Decision-Making: The Effect of Insurance Coverage for Fertility Medications

Claire Jones[R](1), Kimberly Liu(2).
(1) Obstetrics and Gynaecology, University of Toronto, (2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, Mount Sinai Hospital

Objective: To analyze the effect of insurance coverage for fertility medications on patients' fertility treatment decision-making.

Methods: A cross-sectional study involving a survey of patients' perception of the impact of insurance coverage for fertility medications on fertility treatment decisions, and corresponding chart review. Women aged 18 to 45 years at one Canadian university-affiliated fertility centre were included. Research Ethics Board approval for the study was obtained from Mt. Sinai Hospital. The primary outcome was a difference in the impact of insurance coverage for fertility medications on the decision to undergo fertility treatment. Secondary outcomes included the impact of insurance coverage on specific treatment decisions and actual differences in treatments between women with and without insurance coverage. Women were divided into 3 groups based on insurance coverage and the data collected from the survey and chart review were analyzed using chi-squared tests for all groups with pairwise chi-squared tests for group comparisons using a bonferroni adjustment method.

Results: Of the 244 patients approached, 214 consented to participate. Ninety (42%) had insurance that covers fertility medications, 57 (27%) did not, and 67 (31%) did not know if they have coverage. There was no difference between groups on the impact of insurance coverage on the overall decision to undergo fertility treatment ($p=0.061$). However, significant differences ($p<0.05$) were found between groups for specific decisions such as to use fertility drugs, use oral versus injection drugs, delay starting fertility treatment, do IVF, and decide how many embryos to transfer. However, there was no significant difference on the impact of insurance coverage on the number of IVF cycles ($p>0.05$). No significant difference was found between groups for the time from consultation to first medicated cycle or to complete 3 IUI or 1 IVF cycles, number of clomiphene or gonadotropin cycles, time or number of cycles until pregnant, or number of embryos transferred at IVF ($p>0.05$).

Conclusions: Women perceive that having insurance coverage for fertility medications impacts fertility treatment decisions about specific treatments, but not the overall decision to undergo fertility treatment.

Funded by: Canadian Foundation for Women's Health

ABSTRACT #P-J5

Utilization of Molecular Testing to Determine the Optimal Sampling Strategy for the Detection of Urogenital C. Trachomatis and N. Gonorrhoeae in Adolescent Females

Tania Dumont[F](1), Kaede Ota(2), Susan Richardson(3), Erin Barlow(4), Trisha Tulloch(5), Catherine Maser(6), Debra Katzman(6), Yvonne Yau(3), Lisa Allen(4)
Hospital for Sick Children; (2) Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; (3) Division of Microbiology, Hospital for Sick Children;(4) Section of Gynaecology, Division of Endocrinology, Hospital for Sick Children; (5) Adolescent Medicine, Hospital for Sick Children; (6) Division of Adolescent Medicine, Hospital for Sick Children.

Objective: To determine the screening method preference and optimal diagnostic strategy for Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (GC) in adolescent females.

Methods: Ongoing prospective observational study, where adolescent females meeting inclusion criteria, provided the following STI specimens: vaginal swab (patient and physician collected), urine, and endocervical swab. Questionnaires were completed by physician and patient.

Results: Thus far thirty patients between the ages of 15 and 19 have been included in our study. Most were asymptomatic (83%), not pregnant (62%), had previously had a pelvic exam (77%), had a normal pelvic exam the day of testing (87%), and were Tanner 5 for breast (97%) and pubic hair (97%). All had previously had vaginal intercourse, 4% had anal intercourse, and 64% had performed and received oral intercourse. Forty-four percent had previous had chlamydia, 5% gonorrhea, 1% genital warts, and none had syphilis or herpes. The majority of patients thought that it was very easy to understand instructions (85%) and to actually collect their own vaginal swab (79%). Seventy-nine percent strongly agreed or agreed that the vaginal swab could be accurate. During swab collection, only 7% were somewhat anxious or very anxious and only 7% felt some kind of pain. Overall the preferred method was the urine testing followed by the self-vaginal swab and the physician collected vaginal, and the least favourite by far was the cervical swab. Eighty-six percent of patients would be willing to collect their own vaginal swab on a yearly basis and 93% would recommend this form of testing to a friend. When comparing our gold standard cervical swabs for CT and GC against the other three collection methods, there was agreement amongst tests over 90% of the time. Even accounting for chance, the Kappa coefficient for all methods remained 84% accurate, with vaginal swabs (both types) being better then urine.

Conclusions: Preliminary results show that self-collected vaginal swabs and urine specimens are acceptable and preferred methods for STI testing by adolescent females. They are easy to do and render very little discomfort or anxiety. If these methods prove to be concordant with gold standard endocervical swabs, they should be considered first line for STI testing in this population as adolescents would agree to them more frequently compared to endocervical swabs requiring speculum exam.

ABSTRACT #P-J6

Cultural Barriers to Fertility Treatment in the Toronto Chinese Community

Ingrid Lai[M](1), Samantha Yee(2,3), and Ellen Greenblatt(3)
(1)Faculty of Medicine, University of Toronto; (2)Faculty of Social Work, University of Toronto; (3)Centre for Fertility and Reproductive Health.

Objectives: To determine whether barriers to fertility evaluation and treatment exist due to cultural perceptions of infertility in the Chinese community. To investigate whether cultural perceptions affect help-seeking behaviour and access to fertility treatment in Chinese individuals.

Methods: The study sampled reproductive-aged (18-44 years old) males and females of Chinese descent. A 21-item survey with questions covering attitudes, perceptions, and help-seeking behaviours of infertility was made available to voluntary anonymous participants at two Chinese family practices in and surrounding Toronto. A total of 80 questionnaires were distributed, and of these, 44 were returned yielding a response rate of 55%. Forty-one surveys met criteria to be included in data analysis.

Results: Among the 41 participants, 65.9% were females and 34.1% were males. A total of 73.2% were married or in a relationship, and 75.6% had college, university, or post-graduate degrees. Sixty-seven percent did not have children and 20% had infertility issues. The majority (75.7%) indicated they would seek help if they had problems conceiving and 80.5% would talk to their family doctors. Regarding treatment choice, most participants chose Western medicine (WM; 82.1%) followed by traditional Chinese medicine (TCM or Chinese herbal medicine; 61.5%) over other treatments. Demographic variables (i.e. gender, age group, relationship status, education level) were found to be insignificant in predicting preference for using either WM or TCM to deal with infertility issues. Despite the strong preference for WM, only 27% had heard of assisted reproductive technologies (ART), which is the cornerstone of fertility treatment in WM. Interestingly, despite this lack of knowledge, 58.9% of participants would consider ART while 32.4% were neutral. Lastly, some common Chinese cultural perceptions toward infertility were apparent though these did not seem to influence the individual's chosen treatment.

Conclusions: Preliminary data from this study suggest that while most Chinese individuals would choose Western medicine as the primary method of fertility treatment, many are not knowledgeable about what this entails. Many Chinese individuals would also use traditional Chinese medicine concurrently. The next step is to include a larger sample of the Toronto Chinese community to better understand whether cultural perceptions of infertility affect access to fertility treatment.

ABSTRACT #P-K1

Chronic Maternal Adversity Modifies Activity and Attention Behaviours in Juvenile Guinea Pig Offspring: Dopaminergic Modulation

Jeff Emack(G)(1) and Stephen Matthews(1,2,3)
Departments of (1)Physiology, (2)Obstetrics and Gynaecology, and (3)Medicine, Faculty of Medicine, University of Toronto.

Objective: Maternal adversity during the perinatal period has been linked to attentional and behavioral problems in children, as well as increased adrenocortical activity. Previously, we demonstrated juvenile offspring of mothers exposed to chronic maternal adversity (CMA) display elevated basal adrenocortical activity. CMA also increased locomotor activity in adult male offspring and decreased attention in adult female offspring. Given that these alterations in behavior typically emerge in children and are linked to modified central dopamine signaling, we hypothesized that; 1) CMA increases locomotor activity and decreases attention in juvenile male and female offspring and, 2) administration of d-amphetamine (AMPH) will reverse these behavioral effects.

Methods: Guinea pigs were exposed to a sequence of mild/moderate stressors every other day over the second half of gestation until weaning on postnatal day 25 (n=8). Control animals remained undisturbed (n=8). After weaning, locomotor activity was assessed in novel (open-field; 30min) and familiar (home-cage; 24hr) environments in male and female offspring. Attention was assessed using prepulse inhibition (PPI). A subset of animals (n=6-8/gp) was treated with AMPH (1ml/kg, *sc*) prior to testing.

Results: In male offspring, CMA resulted in a significant 1-h phase-shift in the profile of diurnal activity in the home cage environment. In contrast, CMA decreased activity in the novel open-field ($p<0.05$). There was no effect of CMA on activity in females. Further, CMA did not alter PPI responses in either sex. AMPH increased activity ($p<0.01$) in the home cage, but profoundly reduced activity in the open-field, in both sexes ($p<0.01$). Similar behavioral responses were observed in CMA and control offspring. Interestingly, AMPH treatment increased attention in female offspring, but only in the CMA group ($p<0.01$); a similar trend was observed in males.

Conclusion: CMA profoundly alters the diurnal profile of locomotor activity, as well as decreasing exploratory activity in the open field, but this only occurs in males. Interestingly, the effects of AMPH were highly context-dependent, with AMPH causing reduced activity in a novel setting and increased activity in a familiar setting in both sexes. Further, there was no significant interaction of CMA with this response. In the present study, CMA did not significantly modify attentional systems (as determined by PPI), however there was a significant interaction of CMA with the effects of AMPH on attention in female offspring. Clearly, CMA results in complex changes in activity and attention behaviors, aspects of which appear to be modulated by altered dopamine signaling.

ABSTRACT #P-K2

Effects of Prenatal Synthetic Glucocorticoid Treatment on Locomotor Activity and Attention

Vasilis Moisiadis[G](1), Alisa Kostaki(1), Stephen G. Matthews(1,2,3).
(1)Departments of Physiology, (2)Obstetrics and Gynaecology and (3)Medicine, Faculty of Medicine, University of Toronto.

Objective: Approximately 10% of pregnant women are at risk of preterm delivery. The majority of these women receive treatment with synthetic glucocorticoids (sGCs) to help reduce the risk of infant respiratory distress syndrome. In animal studies, prenatal exposure to sGCs has been associated with modification of hypothalamic-pituitary-adrenal (HPA) function in first (F1) and second (F2) generation offspring. In humans, prenatal treatment with multiple courses of sGC has been linked to behavioral disturbance in young children. We hypothesized that prenatal sGC treatment leads to altered locomotor activity and attention in young F1 offspring.

Methods: Pregnant guinea pigs were treated with betamethasone (BETA; 1 mg/kg gestational days (GD) 40/41, 50/51, 60/61; n=7) or saline (Ctrl; n=8). Offspring were tested in an open field for locomotor activity on postnatal days (PND) 19 and 24, and were tested for prepulse inhibition (PPI; PND 23) as a measure of sensory motor gating (attention).

Results: Prenatal exposure to sGC resulted in significantly increased locomotor activity in BETA male offspring in the early phases of the testing at PND19 and PND24 ($p<0.05$), and increased total activity over the 30 min test at PND24 ($p<0.05$); there was a trend towards increased total activity on PND19. There were no significant differences in locomotor activity between BETA and Ctrl female offspring. Interestingly, in both male and female BETA exposed offspring there was a significant decrease in activity over the 30 min period. In contrast, there was no significant reduction in activity in the Ctrl offspring. Prenatal sGC treatment tended to increase PPI in male offspring but decrease PPI in female offspring, though these affects failed to attain significance.

Conclusions: Juvenile male F1 offspring exhibit increased locomotor activity in an open field and a trend towards increased prepulse inhibition (increased attention) as a result of prenatal sGC treatment. In contrast, prenatal sGC does not appear to affect activity in female offspring, though there was a trend towards reduced attention. It is evident that prenatal treatment with sGC causes significant changes in behaviours in juvenile offspring and that these effects are sex-specific. We are currently investigating the molecular mechanism that underlie these behavioural changes as well as whether these effects extend into the next generation.

Funded by: Canadian Institutes for Health Research.

ABSTRACT #P-K3

Serum HCG as a Predictor of Pregnancy Outcome in IVF and ICSI Cycles

Dora Chan [R](1), Ellen Greenblatt (2).
(1) Department of Obstetrics & Gynaecology, University of Toronto, (2) Division of Reproductive Endocrinology and Infertility, Department of Obstetrics & Gynaecology, Mount Sinai Hospital.

Objective: To assess the predictive value of HCG assays in ART pregnancies and to evaluate whether two sequential HCG measurements can more accurately predict pregnancy outcome.

Methods: 463 IVF or ICSI cycles from 2006 to 2009 were analyzed and classified into 5 pregnancy outcomes: biochemical, ectopic, spontaneous abortions (SA), single fetal sac and heartbeat on first trimester ultrasound (T1US), and multiple fetal sacs and heartbeats on T1US. The viable pregnancies were further subcategorized into day 3 embryo transfer or day 5 or 6 blastocyst transfer as this has been previously shown to be a factor in HCG rise. Data on the outcomes were retrospectively retrieved from patient questionnaires and clinical charts.

Results: The mean HCG concentration on day 14 for biochemical, ectopic, SA, single sacs and multiple sacs were 36, 27, 96, 152, and 270IU/ml respectively. Using receiver operator characteristic curves, a suitable cutoff point to predict viable and nonviable pregnancy, as well as single versus multiple pregnancies, can be calculated.

Conclusions: The early measurement of HCG in IVF and ICSI pregnancies can be used to help predict the clinical outcome. Sequential measurements done on day 14 and 16 can provide a greater predictive accuracy of pregnancy outcome.

ABSTRACT #P-K4

The Role of Cephalocentesis in the Management of the Severely Hydrocephalic Fetus

Erica Howse (F)(1), TG Teoh (4), E Kelly (2), D Chitayat (1), PJ McParland (3), G Ryan(1).
(1)Department of Obstetrics and Gynaecology, Division of Maternal Fetal Medicine – Fetal Medicine Unit, Mount Sinai Hospital; University of Toronto; (2)Department of Pediatrics, Mount Sinai Hospital; University of Toronto

Objective: To review the role of cephalocentesis in the fetus with severe hydrocephalus and to examine fetal, neonatal and delivery outcomes at two tertiary care centers.

Methods: This descriptive study identified all cases of cephalocentesis referred to the Fetal Medicine Unit at Mount Sinai Hospital, Toronto, ON and the National Maternity Hospital, Dublin, Ireland between 1985 and 2011. Outcome information was obtained from maternal and pediatric charts, procedure, labor and delivery and autopsy records (in the case of stillborn fetuses). Antenatal ultrasound findings, fetal karyotype, the method and route of cephalocentesis were evaluated.

Results: 56 cases of cephalocentesis were identified. The method of cephalocentesis was not standardized. All patients had an antenatal ultrasound that diagnosed severe fetal hydrocephalus. The mean gestational age at diagnosis and delivery were 32 and 35.5 weeks respectively. Thirty five of 56 (62.5%) underwent induction of labor. Two patients were delivered by cesarean section (3.5%). Twenty three underwent spontaneous vaginal delivery, 22 breech vaginal deliveries and 9 operative vaginal deliveries. 12 (21%) patients had termination of pregnancy with fetal intracardiac KCl injection prior to delivery. 39 (70%) fetuses were stillborn (including the terminations with KCL). There were 13 (23%) neonatal deaths. Four (7%) children survived cephalocentesis and delivery. The mortality rate associated with cephalocentesis and delivery was (40/44) 91%.

Conclusion: Cephalocentesis performed for severe fetal hydrocephalus is associated with a high mortality rate, however survival is possible. The procedure is associated with low rate of cesarean delivery of the hydrocephalic infant. Parents should receive multidisciplinary counseling regarding mode of delivery, termination of pregnancy, perinatal and neonatal outcomes prior to the intervention.

.

ABSTRACT #P-K5

Antenatal Dietary Restriction Impairs Fetal Metabolism and is Improved by a Diet Enriched in Omega-3 Fatty Acids

Lauren A Chun[G](1,2), Stephen Lye(1,2,3).
(1) Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Departments of (2) Physiology and (3) Obstetrics & Gynaecology, University of Toronto

Objectives: Our laboratory has established a mouse model of antenatal dietary restriction (ADR) whereby pregnant C57BL/6J (B6) mice are either fed *ad libitum* as controls (C) or provided a 30% calorie-reduced diet (R) from gestational day (d) 6.5 to 17.5. Near term pregnancy (d18.5), R fetuses are growth-restricted with males showing an increase in blood glucose and expression of hepatic gluconeogenic enzymes. By adulthood, they develop insulin resistance, glucose intolerance, obesity and hypertension (referred to as the metabolic syndrome). However, their progression towards the metabolic syndrome phenotype is not fully understood. The implementation of dietary omega-3 (ω3) fatty acids has been successfully used to attenuate the development of diet-induced metabolic syndrome symptoms. By studying R offspring, we sought to: 1) determine whether hepatic insulin resistance is developed by late gestation and, 2) establish whether a postnatal diet rich in ω3 fatty acids will reduce their likelihood of developing glucose intolerance, insulin resistance and obesity.

Methods: Pregnant B6 mice were either fed *ad libitum* throughout gestation or subjected to ADR. In *study 1* (fetal study), an intraperitoneal injection of 30 μCi of [U-^{14}C]D-glucose in saline solution was administered on d18.5 (N = 5 to 6/group). After 6 hours, mice were euthanised and glycogen was isolated from fetal liver tissue to detect the incorporation of [U-^{14}C]D-glucose. Resting fetal blood serum insulin levels were measured at d18.5 (N = 3 to 6/group). In *study 2* (intervention study), all pregnant mice were fed *ad libitum* from d17.5 onwards. Post-weaning, male pups were fed either the control diet (~1% of dietary fat content ω3 fatty acids) or an enriched ω3 diet (~35% of dietary fat content ω3 fatty acids). Glucose tolerance testing was conducted at 3 and 12 months of age (N = 4 to 13/group). At 12 months of age, body composition was measured by Dual-energy X-ray absorptiometry (DEXA) (N = 5 to 11/group).

Results: In *study 1*, mice from ADR mothers synthesized lower levels of glycogen but had similar serum insulin levels compared to controls. In *study 2*, at 3 months of age, R/ω3 mice had significantly improved insulin resistance compared to R/C maintained to 12 months of age. At 3 months of age, C/ω3 had unchanged insulin resistance compared with C/C, and R/ω3 and C/ω3 were more glucose tolerant than controls (R/C and C/C, respectively). DEXA revealed R/ω3 mice to have a lower percentage of body fat compared to R/C, while there was no difference between C/ω3 and C/C. Mice fed ω3 diet had significantly lower body weights than their C counterparts.

Conclusions: Evaluation of glycogen synthesis suggests that hepatic insulin resistance develops prior to birth indicating the severity of ADR's impact on fetal metabolism. The likelihood of following this programmed trajectory towards developing the metabolic syndrome can be reduced by introducing a postnatal diet enriched in ω3 fatty acids.
Funded by: CIHR

INDEX
Presenters by Last Name

P/O #	Name	Category	Supervisor(s)
B4	Kenigsberg, Schlomit	O	Librach
H6	Kfouri, Julia	R	Whittle
E5	Khoshbakt, Noushin	R	Lovatsis
O6	Kibschull, Mark	PD	Lye
B3	Klachook, Shany	O	Casper
O3	Koscik, Rebecca	G	Bocking/Challis
C2	Kroft, Jamie	F	Pittini
C3	Kroft, Jamie	F	Shier
A5	Kwan, Melissa	G	Lye
O7	Ladhani, Noor	F	K Murphy
J6	Lai, Ingrid	M	Greenblatt
D3	Lau, Angela	G	TJ Brown
H1	Lee, Yu-Hui	G	Lye
A4	Lee, Dennis	PD	Nevo
G3	Li, Han	G	Adamson
H5	Li, Yunqing	G	Lye
F3	Mark, Siobhan	R	K Murphy
O4	McCarthy, Fergus	PD	Kingdom
A3	Melland-Smith, Megan	G	Caniggia
A6	Minhas, Abhijeet	G	Adamson
K2	Moisiadis, Vasilis	G	Matthews
C6	Moore, Shannon	R	Yudin/K Murphy
G5	Murji, Ally	R	Berger
B5	Naranian, Taline	G	Jurisicova
H2	Nedd-Roderique, Tamara	G	Lye
E1	Oleksiv, Nadia	O	Alarab
B1	Omari, Shakib	G	Jurisicova
O5	Porat, Shay	F	Maxwell
G1	Proctor, Leslie	M	Kingdom
J1	Qin, Jing	R	Farrugia/Lackie

P/O #	Name	Category	Supervisor(s)
H4	Sabra, Sally	F,G	Lye
O12	Schrey, Susanne	F	Ryan
C1	Sharma, Kalpana	R	Kingdom/Windrim
D1	Shathasivam, Premalatha	G	TJ Brown
C4	Shirreff, Lindsay	R	G Liu
H3	Shynlova, Oksana	O	Lye
O10	Sivasubramaniyam, Tharini	G	Caniggia
E6	Sobel, Mara	R	P Lee
B6	Sojecki, Agata	O	Librach
I2	Teichert, Anouk-Martine	O	Librach
O8	van Lonkhuijzen, Luc	F,G	
O14	Walker, Melissa	M	Kingdom
D4	Wegener, Marie	M	Ferguson
I5	Yavorska, Tetyana	G	Jurisicova

Presenters by Abstract # and Session

ORALS (O)

Morning

Oral Session I (8:30-9:45 a.m.)

O1 Bouchard-Fortier, Genevieve
O2 Gunn, Beth
O3 Koscik, Rebecca
O4 McCarthy, Fergus
O5 Porat, Shay

Oral Session II (11:10 a.m. -12:10 p.m.)

O6 Kibschull, Mark
O7 Ladhani, Noor
O8 van Lonkhuijzen, Luc
O9 Chan, Crystal

Afternoon

Oral Session III (1:20-2:35 p.m.)

O10 Sivasubramaniyam, Tharini
O11 Alladin, Naazish
O12 Schrey, Susanne
O13 Audette, Melanie
O14 Walker, Melissa

Presenters by Abstract # and Session cont'd

POSTERS (P)

SESSION I (MORNING) (Groups A-F) (9:45-11:05 a.m.)

Poster Group A

A1 Ebrahimi, Jessica
A2 Franco, Christopher
A3 Melland-Smith, Megan
A4 Lee, Dennis
A5 Kwan, Melissa
A6 Minhas, Abhijeet

Poster Group B

B1 Omari, Shakib
B2 Grover, Stephanie
B3 Klachook, Shany
B4 Kenigsberg, Schlomit
B5 Naranian, Taline
B6 Sojecki, Agata

Poster Group C

C1 Sharma, Kalpana
C2 Kroft, Jamie
C3 Kroft, Jamie
C4 Shirreff, Lindsay
C5 Chan, Crystal
C6 Moore, Shannon

Poster Group D

D1 Shathasivam, Premalatha
D2 Feigenberg, Tomer
D3 Lau, Angela
D4 Wegener, Marie
D5 Cruickshank, Beth

Poster Group E

E1 Oleksiv, Nadia
E2 Baud, David
E3 Best, Carolyn
E4 Diamond, Phaedra
E5 Khoshbakt, Noushin
E6 Sobel, Mara

Poster Group F

F1 Hackmon, Rinat
F2 Caprara, Daniela
F3 Mark, Siobhan
F4 Hawkins, Lesley
F5 Iqbal, Salikah

Presenters by Abstract # and Session cont'd

POSTERS (P)

SESSION II (AFTERNOON) (Groups G-K) (2:35-4:05 p.m.)

Poster Group G

G1 Proctor, Leslie
G2 Iqbal, Majid
G3 Li, Han
G4 Bhuiyan, Manzerul
G5 Murji, Ally

Poster Group H

H1 Lee, Yu-Hui
H2 Nedd-Roderique, Tamara
H3 Shynlova, Oksana
H4 Sabra, Sally
H5 Li, Yunqing
H6 Kfouri, Julia

Poster Group I

I1 Chua, Shawn
I2 Teichert, Anouk-Martine
I3 Bhorat, Saajida
I4 Aarabi, Mahmoud
I5 Yavorska, Tetyana
I6 Dar, Shir

Poster Group J

J1 Qin, Jing
J2 Garbedian, Kimberley
J3 Moved to E6
J4 Jones, Claire
J5 Dumont, Tania
J6 Lai, Ingrid

Poster Group K

K1 Emack, Jeff
K2 Moisiadis, Vasilis
K3 Chan, Dora
K4 Howse, Erica
K5 Chun, Lauren A

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

Department of Obstetrics and Gynaecology
Faculty of Medicine, University of Toronto
92 College St.
Toronto, Ontario M5G 1L4

Telephone: 416 978 2668 Fax: 416 978 8350
Website: http://www.obgyn.utoronto.ca

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

Research Day, Friday, May 6, 2011 – Location and Map

Location: Research Day will take place at **Hart House,** 7 Hart House Circle, M5S 3H3 in the University of Toronto. This is in the heart of the University, just west of Queen's Park/Avenue Road and north of College Street, in between the Museum and Queen's Park subway stations.

By car: By car you may approach the building from the main College St. entrance west of Queen's Park, or the entry from Wellesley St. There is pay parking on Hart House Circle and around King's College Circle.

By foot: You may take the same approach walking, but you can also walk north on the west side of Queen's Park Circle and take the pedestrian pathway just north of Wellesley that leads you to Hart House. The first doors will take you close to the registration desk on the first floor.

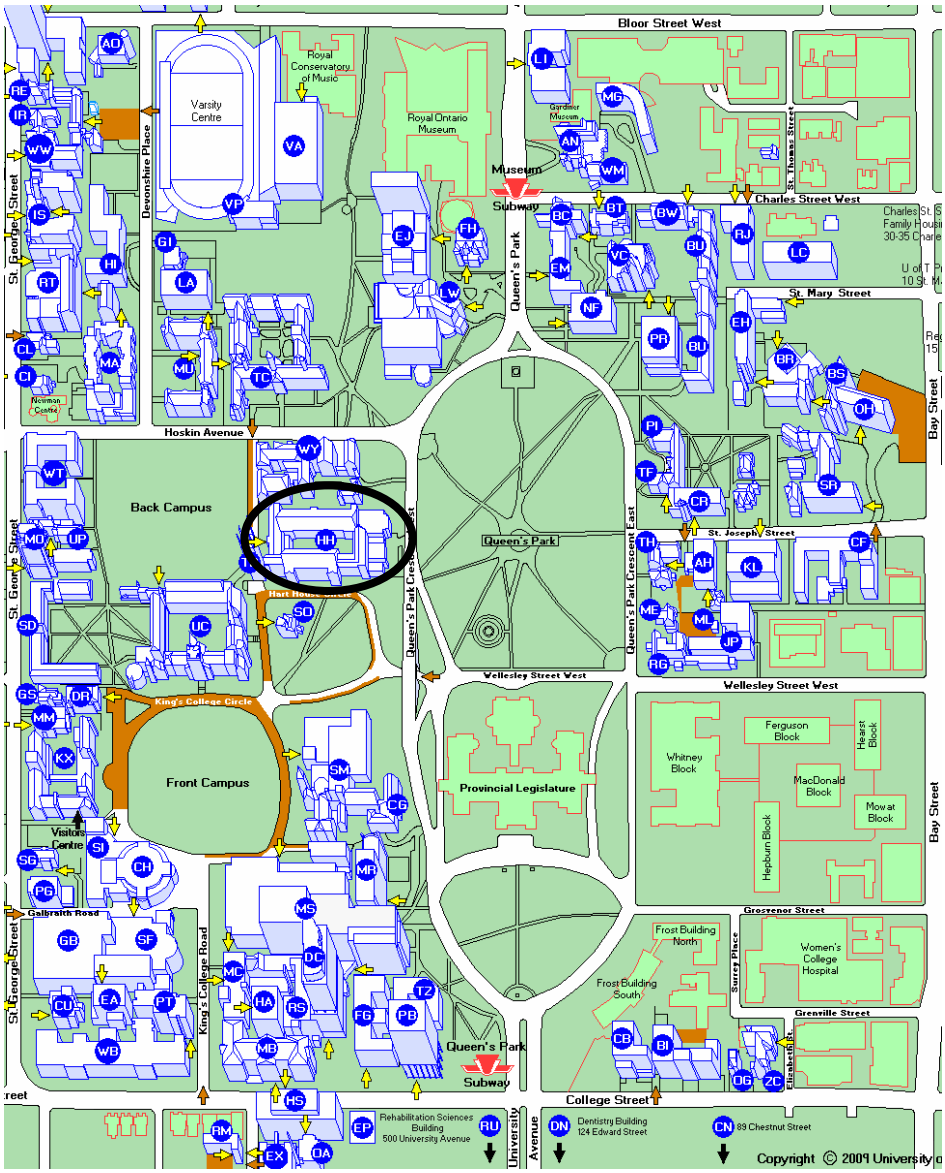
By subway: If coming from the **south**, go to **Queen's Park** and walk north up the west side of Queen's Park Circle, taking the pedestrian walkway just north of Wellesley. If coming from the **north**, go to **Museum** and exit on the **west side** of Queen's Park/Avenue Road, then walk south and take the walkway to Hart House just north of Wellesley. The first doors will take you close to the registration desk on the first floor.

At Hart House you may enter from the side door on the west or either of the south doors. Registration is located at the door nearest to Queen's Park on the south side of the building.

See Map on Next Page

Avenue Road/
Queen's Park

Bloor Street



Museum
Subway Station

Hart House

Wellesley Street

Queen's
Park Station

College St.

Queen's Park/
University
Ave.

Bio: Dr. Philip Castle

On January 1, 2011, Dr. Philip Castle became the first Executive Director of the American Society of Clinical Pathology (ASCP) Institute. Previously, he was a Senior, Tenured Investigator (2010-11) and Tenure-Track Investigator (2003-10) in the Division of Cancer Epidemiology and Genetics (DCEG) at the U.S. National Cancer Institute (NCI). He received his Ph.D. in Biophysics in 1995 and M.P.H. in Epidemiology in 2000 from the Johns Hopkins University. Dr. Castle did a post-doctoral fellowship at the NIH on the molecular biology of the zona pellucida from 1995-1999, and was a Cancer Prevention Fellow at NCI from 2000-2003.

Dr. Castle's professional interests are (1) epidemiology of human papillomaviruses (HPV) and cervical/anogenital cancer; (2) science and translation of cancer prevention strategies; (3) evidence-based medicine; and (4) international health. At ASCP, Dr. Castle will be leading two programs, the Center for Health Services Research and for Global Outreach. Dr. Castle will be leading the ASCP in delivering new laboratory technologies, including low-cost HPV testing for cervical cancer screening, to underserved populations using the President's Emergency Plan for AIDS Relief (PEPFAR) clinics and clinical labs. While at the NCI, he is the lead investigator on several epidemiologic studies, including the Mississippi Delta Project, The HPV Persistence and Progression Cohort at Kaiser Permanente Northern California, the Anal Cancer Screening Study, and the Low-Cost Molecular Cervical Cancer Screening Study in China.

Dr. Castle has published over 200 papers on HPV and cervical cancer in medical journals; including articles in the prestigious journals, *New England Journal of Medicine, Lancet, Lancet Oncology, Journal of the National Cancer Institute, British Medical Journal,* and *Cancer Research*. He currently serves on the editorial boards of the *Journal of Infectious Diseases* and *Journal of Lower Genital Tract Disease*. He has served as an invited speaker or session chair in many forums, including the American Association for Cancer Research, International Papillomavirus Society, and the European Union on Genital Infection and Neoplasia (EUROGIN).

Dr. Castle serves as a technical advisor on many national and international committees for the prevention of cervical cancer, including 1) Founding member of the American Society for Colposcopy and Cervical Pathology (ASCCP) Practice Improvement in Cervical Cancer Screening and Management (PICSM) Committee, and a Steering Committee Member and Evidence Review Data Committee Co-Chair, ACS/ASCCP Symposium on Cervical Cancer Screening and Prevention: The Role of Molecular Testing; 2) Member of the Senior Advisory Group for the evaluation and impact of screening and treatment approaches for the prevention of cervical neoplasia in HIV-positive women in Burkina Faso and South Africa: HPV in Africa Research Partnership; 3) Advisor and technical consultant for the development of cervical cancer prevention programs in Rwanda, Zambia, Botswana, Senegal, and El Salvador; and 4) Co-investigator for a randomized controlled trial of primary HPV testing for cervical cancer screening in Australia. Dr. Castle also serves as a member of the Union for International Cancer Control's Cervical Cancer Initiative Advisory Group. He routinely advises/consults for many health organizations, including the World Health Organization, the U.S. Food and Drug Administration, and the Centers for Disease Control and Prevention.

In 2006, Dr. Castle received the EUROGIN Distinguished Service Award, in 2007, the NIH Merit Award for his leadership in guiding the translation of human papillomavirus testing into cervical cancer screening for low-resource regions of the United States, and in 2010 he was awarded the highest honour of the ASCCP, the Distinguished Scientific Achievement Award.

Obstetrics & Gynaecology
UNIVERSITY OF TORONTO

Call for Abstracts
28th Annual University of Toronto Department of Obstetrics and Gynaecology Research Day, Friday, May 6, 2011

Dear Faculty, Staff, Trainees and Guests:

The 28th Annual Research Day of the University of Toronto Department of Obstetrics and Gynaecology will take place from 8:00 a.m. to 6:30 p.m. on **Friday, May 6, 2011** at Hart House, University of Toronto, 7 Hart House Circle, M5S 3H3.

We are very pleased to have Dr. Philip Castle as this year's Henderson Lecturer. He will be speaking on the topic, "Separating the Wheat from The Chaff: The Paradigm of Human Papillomavirus (HPV) and Cervical Cancer". Dr. Castle is the first Executive Director of the American Society of Clinical Pathology (ASCP) Institute; previously, he was Senior Tenured Investigator with the U.S. National Cancer Institute. Please see our website for a short biography.

This year's **abstracts** for oral and poster presentations are **due on Monday, March 7, 2011.** Please note that those submitting abstracts are asked for their preference of oral or poster presentation**. Please confer with your supervisor to ensure only one request for an oral comes from each supervisor.**

Please go to our website at http://www.obgyn.utoronto.ca/Research/ResearchDay.htm for the following information and links for **abstract submission**:

Abstract Requirements and Template (required for submission)
Contact Information Form (required for submission)
Instructions for Oral Presenters (coming soon)
Instructions for Poster Presenters (coming soon)
Awards Criteria
Research Day Poster
Research Day Booklet (coming soon)
Research Day Programme (coming soon)
Location (coming soon)

If you have any questions with regard to these documents or the process, please contact me at helen.robson@utoronto.ca.

We look forward to another excellent Research Day, an opportunity to exhibit and share all the cutting-edge research in the department!

Best regards,
Helen Robson
Consultant; Research Coordinator

RESEARCH DAY ABSTRACT REQUIREMENTS:

PLEASE SUBMIT ONLY ONE ABSTRACT. You may submit work in progress. *Please help us to streamline the process of submission and printing by following the guidelines below.*

Format: Word
Margins: top, left, right and bottom all 1 inch
Font: Times New Roman
Font Size: 12
Spacing: Single-spaced
Length: Maximum of **ONE** page
Format: Do not justify or centre.
Structured abstract required with headings:

Objectives
Methods
Results
Conclusions

Template: Please use the attached template for format re titles and names.

Training Status: Graduate Student = G; Resident = R; Clinical Fellow = F; Post-Doctoral Fellow = PD; Medical Student = M
Your training status should be incorporated into the author line. Please see template.

Spelling: Please check your spelling and grammar.

Tables are allowed as long as the total length is within the one page limit**.**

Graphics, if you have them, should be incorporated into your poster and **not** your abstract.

Contact information sheet: Please make sure your contact information is correct, with current information and also your permanent address after Research Day, just in case there is a need to communicate with you after the event.

Submitting: Please use the template for your **abstract** and **save under your last name,** i.e. Jones Abstract.doc. Please complete the **Contact Information form** and **save under your last name,** i.e. Jones Contact Information.doc. Please **email both** documents to Helen Robson at **helen.robson@utoronto.ca by Monday, March 7, 2011. You will receive an acknowledgement of your submission.**

If you have any questions, please contact Helen Robson at helen.robson@utoronto.ca Thank you.

Documents and information on Research Day are also available at:
http://www.obgyn.utoronto.ca/Research/ResearchDay.htm

EXAMPLE: **ABSTRACT #** ***[Leave this line as is]***

ASSESSMENT OF THE FETAL HEART PRIOR TO 15 WEEKS' GESTATION ***[Title is in bolded caps.]***

Fionnuala McAuliffe[F](1), Edgar Jaeggi(2), Lisa Hornberger(2)***.[Only the first author is bolded, with designation re training status in square brackets]***
(1)Maternal-Fetal Medicine Division, Department of Obstetrics & Gynaecology, Mount Sinai Hospital, (2)Department of Cardiology, Hospital for Sick Children, University of Toronto.
[space]

Objective: We sought to document fetal cardiac anatomy by ultrasound prior to 15 weeks' gestation. ***[Heading bolded – main question, objective or hypothesis.]***
[space]
Methods: This is a prospective observational study with institutional ethics approval. Following informed written consent, fifty-seven women underwent transabdominal … ***[Heading bolded – study design, participants, outcome measures]***
[space]
Results: In all cases we obtained the four chamber view and assessed ventricular function. The tricuspid and mitral valves were seen in 52 (92% of cases… ***[Heading bolded -- summary of data]***
[space]
Conclusions: The fetal heart can be examined early in pregnancy and a significant proportion of major structural defects identified. . . ***[Heading bolded – summary and interpretation/significance of findings]***

Funded by: ***[Heading bolded, source of funding, only if applicable]***

INSTRUCTIONS FOR ORAL PRESENTERS

University of Toronto Department of Obstetrics and Gynaecology
Research Day, Friday, May 6, 2011

Thank you for submitting your abstract for Research Day. Your abstract has been chosen for an oral presentation. Please see the details below.

Location: Research Day will take place at **Hart House,** 7 Hart House Circle, M5S 3H3 in the University of Toronto. This is in the heart of the University, just west of Queen's Park/Avenue Road and north of College Street, in between the Museum and Queen's Park subway stations. A map and directions are available on our website (see below).

Time: Research Day will begin with breakfast at 8:00 a.m. on Friday, May 6, 2011 and end with a wine and cheese reception and award presentation from 5:30 to 6:30 p.m.

Registration: Please register first, before you do anything else, in the south corridor near the Great Hall, between 8:00 and 8:25 a.m., to receive your nametag, abstract booklet and any further instructions.

Oral Session Times: There will be three oral sessions, two in the morning (8:30-9:45 a.m. and 11:10-12:10) and one in the afternoon (1:20-2:35 p.m.).

Presentation: Each oral presentation is allowed 15 minutes: **10 minutes** for the presentation and 5 minutes for questions**. Please note that we will adhere strictly to these time limits!**

Audiovisual Support: All presentations will be placed on the Department's laptop in advance of Research Day. **Your presentation must be PC-compatible.**
* You have the choice of bringing your presentation in on a USB key, or emailing it Cherryl Bird, Departmental Assistant, **as early as Monday, May 2, 2011, but NO LATER THAN WEDNESDAY, May 4, 2011.**
By email: Please email **in pdf format only** to c.bird@utoronto.ca **OR**
In person: To 92 College St, 2nd floor.
If you foresee any difficulties, please contact Cherryl ahead of time.
Please provide your own backup for Research Day.

Awards: In order to be eligible for an award, you must be a U of T trainee and present your own work. Your work and presentation will be judged by the Chair of your oral session and two other Judges for the JW Knox Ritchie Research Awards. There will be 5 awards, with a monetary component, based on level of training (Graduate Student, Resident, Clinical Fellow, Post-Doctoral Fellow, Medical Student), rather than type of presentation. (Please see judging criteria on our website.) These awards will be presented at the wine and cheese reception between 5:30 and 6:30 p.m.

***Please see http://www.obgyn.utoronto.ca/Research/ResearchDay.htm for information or contact Helen Robson at* helen.robson@utoronto.ca**

FINAL INSTRUCTIONS FOR POSTER PRESENTERS

University of Toronto Department of Obstetrics and Gynaecology
Research Day, Friday, May 6, 2011

Thank you for submitting your abstract for Research Day. Your abstract has been chosen for a poster presentation. Please see the details below.

Location: Research Day will take place at **Hart House,** 7 Hart House Circle, M5S 3H3 in the University of Toronto. This is in the heart of the University, just west of Queen's Park/Avenue Road and north of College Street, in between the Museum and Queen's Park subway stations. A map and directions are available on our website (see below).

Time: Research Day will begin with breakfast at 8:00 a.m. on Friday, May 6, 2011 and end with a wine and cheese reception and award presentation from 5:30 to 6:30 p.m.

Registration: Please register first, before you do anything else, in the south corridor near the Great Hall, between 8:00 and 8:25 a.m., to receive your nametag, abstract booklet and any further instructions.

Poster boards: We will provide each presenter with a 3' high by 6' wide board and velcro for attaching the poster. Boards will be numbered to correspond to the poster numbers published in the abstract book distributed at the meeting.

Set-up for Posters: ALL POSTERS WILL REMAIN UP ALL DAY IN THE GREAT HALL. Please mount your posters before the programme begins at 8:25 a.m.
Tear-down: Directly after the last poster session, between 4:05 and 4:20 pm.

Poster Session I: The morning session will start with a general walkabout from 9:45 to 10:05 a.m., followed by a Poster Tour from 10:05 to 11:05 a.m..
Poster Session II: The afternoon session will start with a general walkabout from 2:35 to 3:05 p.m., followed by a Poster Tour from 3:05-4:05 p.m.
Poster Tours: Each group will be led by two Chairs, and we have tried to mix basic scientists with clinicians. We ask that you be present the entire time and join the others in your group in the tour. Please be prepared to give a **3-5 minute presentation**, with 5 minutes for discussion/questions. **Please note that strict adherence to timing is essential.**

Awards: In order to be eligible for an award, you must be a U of T trainee and present your own work. Your work and presentation will be judged by the Chairs of your poster tour and one other Judge for the JW Knox Ritchie Research Awards. There will be 5 awards, with a monetary component, based on level of training (Graduate Student, Resident, Clinical Fellow, Post-Doctoral Fellow, Medical Student) rather than type of presentation. Please see judging criteria on our website. These awards will be presented at the wine and cheese reception between 5:25 and 6:30 p.m.

***Please see http://www.obgyn.utoronto.ca/Research/ResearchDay.htm for information or contact Helen Robson at* helen.robson@utoronto.ca**

RESEARCH DAY CONTACT INFORMATION
(To accompany abstract submission by email)
University of Toronto Department of Obstetrics and Gynaecology
28th Annual Research Day
Friday, May 6, 2011

[This is a Word document – please type in the appropriate responses, save under your name, i.e. Jones Contact Information.doc and email, along with your abstract, to: helen.robson@utoronto.ca by **Monday, March 7, 2011**.]

Abstract Title:

Category (Gynaecologic Oncology, Gynaecology, Maternal-Fetal Medicine/Obstetrics, Paediatrics and Adolescent Gynaecology, Reproductive Sciences, or Urogynaecology):

Preference (Oral, Poster, or None):

Do you wish to **withhold your abstract** from **online publication** by reason of intellectual property rights? (eg. an impending patent) Yes/No:

Name of Trainee:

Mode of Address (Mr., Miss, Ms, Mrs., Dr. and include whether M.D. or Ph.D.):

If you receive an award, how would you like your name to appear on the certificate? (eg. Josephina M Doe MD or Josie Doe MD or JM Doe MD):

Affiliation (Hospital, Institute. Department or UT):
Name of Supervisor:
Email address of Supervisor:

University of Toronto Training Status (at submission and Research Day) Please include ALL that apply, eg. a resident also doing a graduate programme should include both.
(Graduate Student = G; Resident = R; Clinical Fellow = F; Post-Doctoral Fellow = PD; Medical Student = M):
If not a U of T trainee, please explain status:

Contact Info for Trainee **before** Research Day (**email,** address, telephone, fax, pager number):

Home Address if not as above(**email,** address, telephone):

Please complete this form, save it under your last name, i.e. Jones Contact Information.doc and email to Helen Robson, helen.robson@utoronto.ca along with your abstract, by Monday, March 7, 2011. Thank you.
Documents and information also at: http://www.obgyn.utoronto.ca/Research/ResearchDay.htm