Incidence of short cervix after Universal cervical length screening in a tertiary level centre

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Objective:

Preterm birth (PTB) is a major obstetrical and global health issue. Pregnant women with shortening cervical length (CL) in the second trimester are at higher risk of PTB. The prophylactic use of vaginal progesterone in women with short CL reduces PTB rate by 45%. We sought to evaluate our experience with universal cervical CL screening by transvaginal ultrasound (TVUS) by determining short cervix incidence at mid-trimester anatomy scans in our tertiary care institution.

Study Design:

We retrospectively assessed singleton pregnancies who underwent midterm anatomy scans between $18^{0/7}$-$23^{6/7}$ weeks' gestation (2015-2019). Pregnancies with fetal anomalies and fetal demise were excluded. Women were categorized into two groups according to anatomy scan time: **Group 1-** after introduction of universal TVUS screening (April 2017–March 31, 2019) and **Group 2-** prior to screening (April 2015-March 31, 2017), where CL was assessed by transabdominal scans (TAS) and TVUS was only performed upon physician request or if TAS CL ≤30 mm. Data regarding short cervix incidence and follow up for CL were collected for both groups.

Results:

6200 pregnancies were included, of which 2719 have presently been analyzed and subdivided, giving 1423 women (52.3%) in Group 1 and 1296 women (47.6%) in Group 2 (Figure 1). No differences were found in mean CL or gestational age at time of anatomy scan (Table 1). Women in Group 1 were significantly more likely to have TVUS cervical assessment, while in Group 2 TAS was the more frequent method ($p<0.005$, for both). The incidence of a short CL was significantly higher in Group 1 2.4% vs 1.5% in Group 2 ($p<0.005$).

Conclusion:

We found significant differences in the incidence of short cervix before and after universal screening. In addition the incidence after screening is more similar to the

incidence in literature. We believe that upon completion of the database with all other parameters collected, the universal screening will impact the incidence of preterm birth as well as intervention rate.

Table 1: Ultrasound and Cervical Length Data

	Group 1 (n=1423)	Group 2 (n=1296)	p value
Gestational age at anatomy scan, weeks*	19.5±0.6	19.5±0.7	0.6
CL measurement during anatomy scan, n (%)	1389 (98.1)	918 (77)	**<0.005**
CL at anatomy (mm)*	39.01±6	39.36±6	0.023
Transvaginal US done, n (%)	1257 (88.3)	285 (22)	**<0.005**
Short cervix TV (CL <25 mm), n (%)	**35 (2.4)**	**18 (1.5)**	**<0.005**
Very short cervix (CL< 15 mm), n (%)	6 (0.4)	7(0.5)	0.65
Follow up for CL needed, n (%)	313 (22.3)	245(20.9)	0.37

* Data is presented as mean ± standard deviation

CL – Cervical length; US – Ultrasound; TV – transvaginal

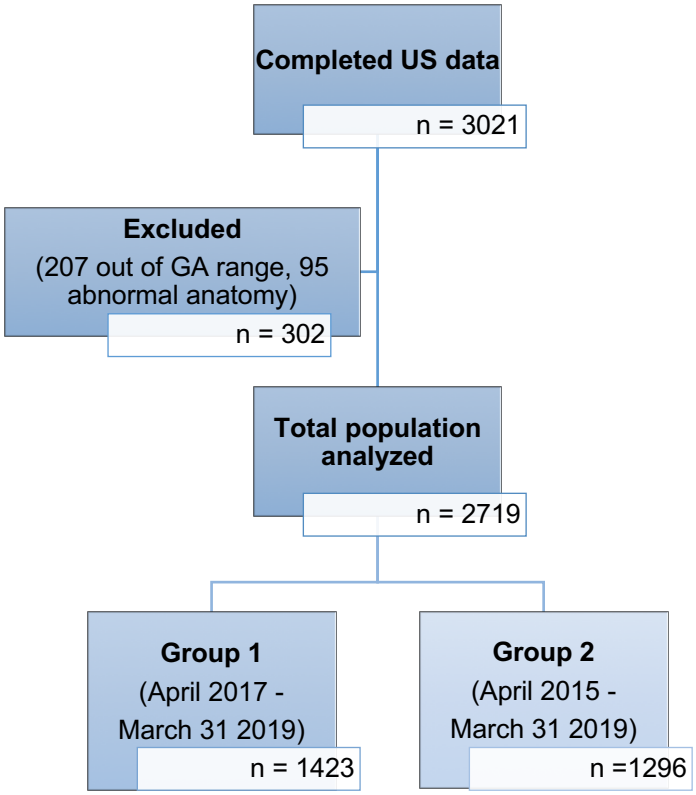

Figure 1. Study Sample Population Breakdown.