Incidence of short cervix after Universal cervical length screening in a tertiary level centre
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Background:
- Preterm birth (PTB) is defined as birth before 37 weeks gestation
- It happens in only 8% of birth in Canada, but accounts for 75% of all newborn deaths & 80% newborn illnesses
- 2/3 of all PTBs are the result of spontaneous labour, with or without PPROM
- Women with a history of PTB are considered high-risk
- There is a 32% chance of recurrence
- Key predictors of PTB: obstetrical history and shortening cervical length (CL) as measured by transvaginal ultrasound (TVUS)
- Prophylactic use of vaginal progesterone in women with short CL reduces PTB rate by 45%

Objectives:
To evaluate the experience with universal cervical CL screening by transvaginal ultrasound by determining short cervix incidence at mid-trimester anatomy scans in our institution

Methods:
- Retrospective cohort study
- Inclusion criteria:
  - Singleton pregnancies with midterm anatomy scans and delivered at SHSC (April 2015 – March 2019)
  - Subsequent CL measurements recorded up to 28+0 GA
- Excluded cases: women who underwent termination of pregnancy, did not deliver at SHSC or had intrauterine fetal demise

Results:

<table>
<thead>
<tr>
<th></th>
<th>Group 1 (n=1423)</th>
<th>Group 2 (n=1296)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational age at anatomy scan, weeks*</td>
<td>19.52 ± 0.6</td>
<td>19.54 ± 0.7</td>
<td>0.59</td>
</tr>
<tr>
<td>CL measurement during anatomy scan, n (%)</td>
<td>1389 (98.1)</td>
<td>918 (77.0)</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>CL at anatomy (mm)*</td>
<td>39.01 ± 6.0</td>
<td>39.36 ± 6.0</td>
<td>0.023</td>
</tr>
<tr>
<td>Transvaginal US done, n (%)</td>
<td>1257 (88.3)</td>
<td>285 (22.0)</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>Short cervix TV (CL &lt;25 mm), n (%)</td>
<td>35 (2.4)</td>
<td>18 (1.5)</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>Very short cervix (CL&lt; 15 mm), n (%)</td>
<td>6 (0.4)</td>
<td>7(0.5)</td>
<td>0.65</td>
</tr>
<tr>
<td>Follow up for CL needed, n (%)</td>
<td>313 (22.3)</td>
<td>245(20.9)</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Discussion:
- To date, 2719 pregnancies have been analyzed and subdivided
  - 1423 women (52.3%) in Group 1
  - 1296 women (47.6%) in Group 2
- No differences were found in mean CL or gestational age at time of anatomy scan
- Women in Group 1 were significantly more likely to have TVUS cervical assessment
- Short CL incidence after introduction of universal screening is more similar to literature values
- There was a significant increase in short cervix detection after universal screening

Future Directions:
- Assessment of US CL measurement for accuracy based on FMF and CLEAR guidelines
- Secondary outcomes will be analyzed such as:
  - Rate of interventions (cerclage, progesterone)
  - Rate of PTB at 37, 34 and 32 weeks
  - Acceptability of the transvaginal US
- We believe the universal screening will impact the incidence of preterm birth as well as intervention rate

Abbreviations:
- CL – Cervical length
- US – Ultrasound
- TA – Transabdominal

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References: