Cervical length as a predictor of latency to labour in twin pregnancies complicated by preterm prelabour rupture of membranes (PPROM): A retrospective study

Jayesh Tigdi, Jessica Luksts, Andrew Stewart, Michelle Morais
Department of Obstetrics & Gynecology McMaster University, Hamilton, Canada

INTRODUCTION

- Preterm prelabour rupture of membranes (PPROM) is a leading precipitant of preterm birth, which is a major cause of neonatal morbidity & mortality
- Ultrasound-measured cervical length can predict latency interval in singleton pregnancies complicated by PPROM
- Detecting onset of labour in twin pregnancies complicated by PPROM by ultrasound determined cervical length is useful as these pregnancies account for significant neonatal morbidity/mortality, healthcare costs, and patient distress

OBJECTIVES

PRIMAR Y OUTCOME:
- In twin pregnancies between 24-33+6 weeks GA complicated by PPROM is the latency interval longer in those with a cervical length >25mm vs. ≤25mm?

METHODS

- Retrospective study
- Inclusions/Exclusions: Identifying 197 charts, 43 charts met inclusion criteria
- Measures: Demographics, Latency interval, Cervical length, Administration of steroid/antibiotics/magnesium sulfate

RESULTS

Table 1: Demographic characteristics in twin pregnancies complicated by PPROM with cervical lengths greater than versus less than 25mm

<table>
<thead>
<tr>
<th>Item</th>
<th>Cervical length ≤25mm</th>
<th>Cervical length &gt;25mm</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Maternal Age</td>
<td>31.8</td>
<td>34.2</td>
<td>P=0.05</td>
</tr>
<tr>
<td>Parity</td>
<td>Primiparity 15/19</td>
<td>11/24</td>
<td>P=0.03</td>
</tr>
<tr>
<td></td>
<td>Multiparity 9/19</td>
<td>13/24</td>
<td></td>
</tr>
<tr>
<td>Chorionicity</td>
<td>Mono/Di 3/19</td>
<td>6/24</td>
<td>P&gt;0.05</td>
</tr>
<tr>
<td></td>
<td>Di/Di 16/19</td>
<td>13/24</td>
<td></td>
</tr>
<tr>
<td>Median age at PPROM</td>
<td>30</td>
<td>30+3</td>
<td>N/A</td>
</tr>
<tr>
<td>Median age at delivery</td>
<td>30+4</td>
<td>32+0</td>
<td></td>
</tr>
</tbody>
</table>

Graph A: The relationship between cervical length (y-axis) and latency interval (x-axis) in those twin pregnancies complicated by PPROM

Table 2: Average latency interval (hours) and length of stay (days) in twin pregnancies complicated by PPROM with shorter (≤25mm) and longer (>25mm) cervical lengths

<table>
<thead>
<tr>
<th></th>
<th>Cervical length ≤25mm</th>
<th>Cervical length &gt;25mm</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average latency interval</td>
<td>49.2 hours</td>
<td>196.0 hours</td>
<td>P=0.035*</td>
</tr>
<tr>
<td>Average length of stay</td>
<td>5.52 days</td>
<td>11.05 days</td>
<td>P=0.030*</td>
</tr>
</tbody>
</table>

Table 4: By ANCOVA regression analysis, the null effect of potential confounders contributing to the statistically significant association between cervical length and latency interval

CONCLUSION

- On average, in those twin pregnancies complicated by PPROM a cervical length greater than 25mm (compared with less than 25mm) is associated with a statistically significant latency interval of 6 days longer
- There is a 5 day greater length of stay in hospital for those pregnancies with a longer cervical length

STUDY STRENGTHS:
- Tertiary care centre data
- Controlled for confounders

STUDY LIMITATIONS:
- Used transabdominal cervical length measures
- Limited cause-effect analysis

IN SUMMARY:
- After controlling for confounders, in twin pregnancies complicated by PPROM, a shorter cervical length is associated with earlier labour onset

The median gestational age of PPROM in twin pregnancies is ~30 weeks

REFERENCES