Urinary tract infections during pregnancy are more common in women with non-operatively managed vesicoureteral reflux

Lauren E. Corona, MD, Muzi Lin, Courtney S. Streur, MD, MS
Department of Urology, University of Michigan, Ann Arbor, Michigan

Background

- Vesicoureteral reflux (VUR) is common in females
- Treatment of VUR has shifted towards non-operative management
- Outcomes of pregnant women with a history of VUR that was not surgically corrected are unclear

Objectives

To determine urinary tract infection (UTI) incidence during pregnancy and associated maternal and fetal outcomes for women with a history of conservatively managed VUR compared to those who underwent surgical correction of their reflux

Methods

- Population:
  - Women >18 years
  - Experiencing a pregnancy in 2006-2019
  - VUR diagnosis
- Primary outcome: Incidence of UTI
- Women with history of anti-reflux surgery vs conservative management
- Secondary outcomes: Adverse pregnancy outcomes
  - Gestational hypertension (HTN)/pre-eclampsia
  - Spontaneous abortion
  - Pre-term delivery

Results

Table 1. Comparison of UTIs during pregnancy and adverse pregnancy outcomes in conservatively vs operatively managed VUR

<table>
<thead>
<tr>
<th>Variable</th>
<th>No Anti-reflux Surgery (15 women, 38 pregnancies, 30 deliveries)</th>
<th>Anti-reflux Surgery (13 women, 32 pregnancies, 21 deliveries)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTI during pregnancy</td>
<td>11/38 (29%) pregnancies</td>
<td>2/32 (6%) pregnancies</td>
<td>0.03</td>
</tr>
<tr>
<td>Afebrile</td>
<td>10/38 (26%) pregnancies</td>
<td>2/32 (6%) pregnancies</td>
<td>0.03</td>
</tr>
<tr>
<td>Febrile</td>
<td>1/38 (3%) pregnancies</td>
<td>0/32 (0%) pregnancies</td>
<td>1.0</td>
</tr>
<tr>
<td>Gestational HTN/pre-eclampsia</td>
<td>6/38 (16%) pregnancies</td>
<td>2/32 (6%) pregnancies</td>
<td>0.28</td>
</tr>
<tr>
<td>Spontaneous abortion</td>
<td>8/38 (21%) pregnancies</td>
<td>10/32 (32%) pregnancies</td>
<td>0.41</td>
</tr>
<tr>
<td>Term delivery (&gt;37 weeks) deliveries</td>
<td>25/30 (83%) deliveries</td>
<td>20/21 (95%) deliveries</td>
<td>0.38</td>
</tr>
<tr>
<td>Pre-term delivery (&lt;37 weeks) deliveries</td>
<td>5/30 (17%) deliveries</td>
<td>3/21 (15%) deliveries</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Table 1: Comparison of UTIs during pregnancy and adverse pregnancy outcomes in conservatively vs operatively managed VUR

- UTIs were significantly more common in the conservatively managed group
  - Only one UTI was febrile, requiring hospitalization
  - Concomitant diagnosis of gestational HTN in this patient
  - Gestational hypertension and pre-term delivery more common with conservative management (not significant)

Conclusions

- In this small cohort of women with a history of VUR, those who did not have operative correction experienced significantly more UTIs during pregnancy
  - Most UTIs were afebrile
  - No significant difference in pregnancy outcomes

Implications

- Women with a history of conservatively managed VUR should be closely monitored for UTIs during pregnancy
  - Does not appear to adversely impact pregnancy outcomes
- A multi-institutional prospective study would better evaluate outcomes of girls with conservatively managed VUR