Retrospective cohort study into incidence and birth outcomes of Intrahepatic Obstetric Cholestasis of pregnancy at a tertiary teaching hospital

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Intrahepatic cholestasis of pregnancy (ICP) increases pregnancy risk, and although uncommon the increased risk of stillbirth can cause maternal anxiety and depression.

The incidence varies depending on population.

Stillbirth in ICP is likely due to acute anoxia.

Diagnostic criteria for and management of ICP are not well defined in Australia.

We aimed to determine the prevalence and pregnancy outcomes of ICP at The Canberra Hospital (TCH).
## Methods – data collected during patient note audit

<table>
<thead>
<tr>
<th>Description</th>
<th>Data collected</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic information</strong></td>
<td>Age, ethnicity, BMI, family history, previous contraception, assisted conception, and previous pregnancy outcomes.</td>
</tr>
</tbody>
</table>
| **Pathology result and ordering information** | - LFT pathology, including Bilirubin, Aspartate aminotransferase, and Alanine aminotransferase.  
  - Bile acid pathology (µmol/l). |
| **Diagnosed pruritus**               | Clinical itch with non-pregnancy causes excluded                             |
| **Direct mention of the following in the electronic note:** | - Obstetric cholestasis  
  - Intrahepatic cholestasis of pregnancy  
  - Liver disease of pregnancy |
| **Management and monitoring**        | - Medication use  
  - Pathology, CTG and ultrasound                                                |
| **Pregnancy outcomes**               | Gestational age of diagnosis, stillbirth, gestational age at delivery, birthweight, PPH, caesarean section rate, assisted delivery rate, IOL rate, NICU admission, follow-up |
## Results – demographics comparing all pregnancies and ICP group

<table>
<thead>
<tr>
<th>Description</th>
<th>Non-ICP (n=10364)</th>
<th>ICP (n=66)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age</td>
<td>30</td>
<td>29.6</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Booking BMI &gt;35</td>
<td>903 (8.7%)</td>
<td>8 (12.1%)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Gestational age at delivery</td>
<td>39.3</td>
<td>37</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>IOL</td>
<td>2841 (27.4%)</td>
<td>44 (66.7%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean birth weight</td>
<td>3.283</td>
<td>3.02</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Caesarean section</td>
<td>2943 (28.4%)</td>
<td>25 (37.9%)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Assisted – Forceps</td>
<td>707 (6.8%)</td>
<td>8.0 (12.2%)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Assisted – Vacuum</td>
<td>711 (6.9%)</td>
<td>0 (0%)</td>
<td>N/A</td>
</tr>
<tr>
<td>Diabetes (GDM, T2DM, T1DM)</td>
<td>1760 (16.9%)</td>
<td>27 (40.9%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Admission to NICU (36.0-42.1)</td>
<td>365 (3.5%)</td>
<td>1 (1.5%)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Stillbirths</td>
<td>121 (1.2%)</td>
<td>0 (0%)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Twin birth rate</td>
<td>252 (2.4%)</td>
<td>9 (13.6%)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Results

- 99% of women presented with pruritis

Management of ICP
- 100% pathology performed
  - 87.9% had deranged LFTs
  - 83.3% had elevated bile acids
- 35.7% induction booked at diagnosis
- 34.8% were monitored with CTG
- 63.6% were monitored with pathology
- 68.1% had an obstetric ultrasound
- 16.7% had a upper abdominal ultrasound and liver panel performed

Treatment for ICP
- 65.2% ursodeoxyxholic acid prescribed
- 43.9% antihistamines
- 18.2% emollients
Conclusion

- ICP pregnancies had higher induction rates at earlier gestations
  - This did not result in statistically significant lighter babies or more NICU admissions

- There was no difference in caesarean section rate, instrumental deliveries or stillbirths between ICP and all pregnancies

- The treatment methodology for ICP pregnancies results in similar outcomes to other pregnancies

- Larger multicentre observational studies are required to determine stillbirth rate and reduction with early IOL
References


