Avoidable Thiamazole-induced Omphalomesenteric Duct Remnants -20-Year Retrospective Study in Our Hospital-

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**Background**

- thiamazole (MMI)
  - 1* line treatment for Graves' disease
  - teratogenic effects
- MMI-related anomalies
  - omphalomesenteric duct remnants
  - omphalocoele
  - esophageal atresia
  - choanal atresia
  - aplasia cutis congenita etc...
- A Study about the teratogenic effect of MMI
  Yoshihara, et al., J Clin Endocrinol Metab. 2012 Jul;97(7):2396-403

Subject: 6,941 women with Graves' disease

<table>
<thead>
<tr>
<th>MMI exposure (+)</th>
<th>MMI exposure (−)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODR *</td>
<td></td>
</tr>
<tr>
<td>omphalocoele</td>
<td>6</td>
</tr>
<tr>
<td>esophageal atresia</td>
<td>1</td>
</tr>
<tr>
<td>Total (live birth)</td>
<td>1,231</td>
</tr>
</tbody>
</table>

* ODR: omphalomesenteric duct remnants

Inevitably, there is a constant limitation on sample size when dealing with infrequent surgical anomalies.

This is a common difficulty when attempting to clarify whether there is any association between infrequent surgical anomalies and MMI exposure using data derived from women with Graves' disease.

**Result**

<table>
<thead>
<tr>
<th></th>
<th>MMI exposure (+)</th>
<th>MMI exposure (−)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODR</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>omphalocoele</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>esophageal atresia</td>
<td>0</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>62</td>
<td>68</td>
</tr>
</tbody>
</table>

omphalomesenteric duct remnants (ODR) 5/12 (42%)
omphalocoele 2/14 (14%)
esophageal atresia 1/46 (2%)

p < 0.01

The highest frequency of omphalomesenteric duct remnants

**Discussion of Limitations**

① incomplete maternal information
  - teratogenic effect of MMI
    - period (1* trimester of pregnancy)
    - dose
  - maternal thyroid function
    - preterm / low birthweight
    - MMI embryopathy

② a retrospective analysis, small sample size
  - difficulty to perform a prospective large-scale study
    - enormous time to obtain a large sample size
    - decreased MMI prescription

**Conclusion**

Based on medical records, we investigated whether patients presenting with major MMI-related surgical anomalies had been exposed to MMI during pregnancy.

Omphalomesenteric duct remnants were strongly associated with MMI exposure.

**Disclosure Statement**

We have declared no conflicts of interest.

**Contact**

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**Take Home Message**

We should not administer thiamazole to women of childbearing age.