Prediction of adverse perinatal outcome in twin pregnancies using sFlt-1/PIGF ratio

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Objectives

- The sFlt-1/PIGF ratio is a useful tool in the diagnosis of pre-eclampsia (PE).
- Data regarding sFlt-1/PIGF and prediction of adverse perinatal outcome (APO) or mean time until delivery (MTUD) in twin pregnancies are scarce.
- We evaluated the predictive value of the sFlt-1/PIGF ratio regarding APO in twin pregnancies with suspected PE and/or HELLP syndrome as well as its correlation with MTUD.

Methods

- Retrospective study (01/2010-18/2018).
- Twin pregnancies with suspected PE/HELLP syndrome in which sFlt-1/PIGF ratio was determined (n=49).
- The ability of sFlt-1/PIGF ratio to predict APO was evaluated using receiver operating characteristic (ROC) curves.

Results

- sFlt-1/PIGF was not associated with APO, but with small for gestational age postnatally (SGA: birthweight <10th centile).
- In the subgroup of women with late onset PE, sFlt-1/PIGF ratio was associated with admission to neonatal intensive care unit.

- sFlt-1/PIGF was a predictor for postnatal SGA in twin pregnancies.
- sFlt-1/PIGF was significantly negatively associated with MTUD (r=-0.409, p<0.001).

Conclusions

- In twin pregnancies, sFlt-1/PIGF is not associated with CAPO, but with postnatal SGA.
- In the subgroup of late onset PE, sFlt-1/PIGF might be useful for APO prediction.
- In twin pregnancies with suspected early onset PE/HELLP, a ratio >53 might be helpful in decision-making regarding lung maturation.

Table 1: MTUD of women with early onset (< 34 weeks) and late onset (≥ 34 weeks) PE/HELLP grouped by sFlt-1/PIGF ratio

<table>
<thead>
<tr>
<th>Group</th>
<th>sFlt-1/PIGF</th>
<th>MTUD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early onset PE/HELLP</td>
<td>≤ 53 vs. &gt; 53</td>
<td>905 h vs. 220 h</td>
<td>0.010**</td>
</tr>
<tr>
<td>Early onset PE/HELLP</td>
<td>≤ 85 vs. &gt; 85</td>
<td>742 h vs. 109 h</td>
<td>0.003**</td>
</tr>
<tr>
<td>Late onset PE/HELLP</td>
<td>≤ 53 vs. &gt; 53</td>
<td>114 h vs. 123 h</td>
<td>0.818</td>
</tr>
<tr>
<td>Late onset PE/HELLP</td>
<td>≤ 110 vs. &gt; 110</td>
<td>127 h vs. 75 h</td>
<td>0.328</td>
</tr>
</tbody>
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