Predictive value of sFlt-1/PIGF ratio and feto-maternal Doppler for adverse perinatal outcome in late-onset pre-eclampsia

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Objectives

- The sFlt-1/PIGF ratio and uterine artery Doppler are useful tools in the diagnosis of pre-eclampsia (PE)
- There is debate about the cerebroplacental ratio (CPR) regarding adverse perinatal outcome (APO) prediction in low-risk pregnancies
- We evaluated the extent to which sFlt-1/PIGF ratio and feto-maternal Doppler may be useful in predicting APO in singleton pregnancies complicated by late-onset PE

Methods

- Retrospective study (01/2010-01/2018)
- Singleton pregnancies with confirmed diagnosis of late-onset (≥ 34 weeks) PE/HELLP syndrome
- sFlt-1/PIGF ratio and feto-maternal Doppler (mUtA-PI: mean uterine artery pulsatility index and CPR) were determined
- The ability of sFlt-1/PIGF ratio, mUtA-PI, CPR to predict APO was evaluated using receiver operating characteristic (ROC) curves

Results

- N=67 patients with late-onset PE
- sFlt-1/PIGF >110 (angiogenic): 40.3% (27/67)
- mUtA-PI > 95th centile: 34.3% (23/67)
- CPR <5th centile: 10.4% (7/67)

- Neither sFlt-1/PIGF nor CPR or mUtA-PI were composite APO predictors

- Abnormal sFlt-1/PIGF, mUtA-PI and CPR were associated with a lower birth weight
- Diagnosis of SGA (BW < 3rd centile) was significantly more often in angiogenic PE

Table 1: Neonatal outcome in cases with and without severely elevated (>201) sFlt-1/PIGF

<table>
<thead>
<tr>
<th>Neonatal Outcome</th>
<th>sFlt-1/PIGF ≤ 201 (n=59)</th>
<th>sFlt-1/PIGF &gt; 201 (n=8)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA at birth</td>
<td>37.3 (36.3-39.3)</td>
<td>36.0 (35.4-38.2)</td>
<td>0.049*</td>
</tr>
<tr>
<td>BW (g)</td>
<td>2840 (2560-3165)</td>
<td>2145 (2041-2512)</td>
<td>0.015*</td>
</tr>
<tr>
<td>BW &lt; 3rd centile</td>
<td>5 (8.5%)</td>
<td>3 (37.5%)</td>
<td>0.048*</td>
</tr>
<tr>
<td>NICU</td>
<td>5 (8.5%)</td>
<td>3 (37.5%)</td>
<td>0.048*</td>
</tr>
<tr>
<td>CAPO</td>
<td>9 (15.3%)</td>
<td>3 (37.5%)</td>
<td>0.147</td>
</tr>
</tbody>
</table>

Conclusions

✓ Prognostic accuracy of sFlt-1/PIGF and feto-maternal Doppler for the prediction of APO in late-onset PE seems to be weak
✓ Adding sFlt-1/PIGF to fetal surveillance is useful for the prediction of SGA
✓ APO was more often in cases with a severely elevated sFlt-1/PIGF (>201)