Adverse perinatal outcomes related to the delivery mode in women with monochorionic diamniotic twin pregnancies

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Objectives

◆ To elucidate the incidence of adverse perinatal outcomes in MD twin pregnancies with respect to the mode of delivery
◆ To assess whether trial of labor for MD twin pregnancies ≥36 weeks was a risk factor for adverse outcomes.

Methods

◆ Study design
Retrospective cohort study
◆ Inclusion criteria
MD twin deliveries between 2003 and 2012 at our center
◆ Exclusion criteria
TTTS, IUFD, TRAP, fetal anomalies, premature births less than 36 weeks’ gestation
◆ Planned delivery mode
The trial of labor (TOL) group/ The cesarean section (CS) group
◆ Perinatal adverse composite outcome
  ◆ Neonatal death
  ◆ Umbilical artery pH < 7.1 (low UA pH)
  ◆ 5-min Apgar scores ≤7 (low APS)
  ◆ Hypoxic ischemic encephalopathy (HIE)
  ◆ Meconium aspiration syndrome (MAS)
  ◆ Intra uterine fetal death (IUFD) after 36 weeks gestation
  ◆ Acute feto-fetal hemorrhage (AFFH)
◆ A multiple logistic regression
◆ Calculation of inter-twin hemoglobin difference

Result

Flow diagram of this study

Women delivered MD between 2003 and 2012 n=535
Women delivered MD after 36 weeks’ gestational age n=310
Exclusion n=15
Uncomplicated MD pregnancies n=295
TOL n=187 (63%)
CS n=108 (37%)

The incidence of the perinatal adverse outcomes

<table>
<thead>
<tr>
<th></th>
<th>TOL (n=374)</th>
<th>CS (n=216)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low UA pH</td>
<td>6 (1.6%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>Low APS (&lt;5)</td>
<td>2 (0.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>MAS</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>RDS</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>HIE</td>
<td>1 (0.3%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>IUFD</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Neonatal death</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>AFFH</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>total</td>
<td>9 (2.4%)</td>
<td>2 (0.9%)</td>
</tr>
</tbody>
</table>

Perinatal risk factors associated with the composite adverse outcome

<table>
<thead>
<tr>
<th></th>
<th>Crude OR (95% CI)</th>
<th>P value</th>
<th>Adjusted OR (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial of labor</td>
<td>0.426 (0.089-2.045)</td>
<td>0.286</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nulliparity</td>
<td>0.471 (0.13-1.706)</td>
<td>0.252</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Short height</td>
<td>0.293 (0.034-2.57)</td>
<td>0.268</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gestational age</td>
<td>0.629 (0.28-1.417)</td>
<td>0.263</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

OR; Odds ratio, CI; confidential interval

Summary of results

◆ The incidences of composite adverse outcomes in the TOL and CS groups were 4.3% and 1.9%.
◆ No IUFD, neonatal death, MAS, RDS, or AFFH was observed.
◆ Two infants in each group developed HIE.
◆ There were two cases with large inter-twin Hb difference; however, both cases were classified as TAPS, not AFFH.
◆ Adverse perinatal outcomes were not significantly associated with any risk factor, including delivery through TOL.

Conclusion

Delivery through TOL may not influence the risk of adverse perinatal outcomes in uncomplicated MD twin pregnancies at ≥36 weeks of gestation.