sIUGR IN MONOCHORIONIC TWINS
Mechanisms of brain damage

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Chronic unbalanced transfusion

- Twin-twin transfusion syndrome (TTTS)
- Twin anemia polycytemia syndrome (TAPS)

Discordant placental territories

- Selective IUGR
- Single fetal demise
- Sustained bradichardia in one fetus

Discordant Malformation

Unidirectional acute transfusion
Unequal placental sharing + placental anastomoses (=INTERFERENCE IN NATURAL HISTORY)
MC-sIUGR and UA Doppler in the IUGR fetus

TYPE I

GA@delivery 35w
Normally good prognosis

TYPE II

GA@delivery 29w
Deterioration/IUFD IUGR
PREDICTABLE

TYPE III

GA@delivery 32w
IUFD SGA/brain injury AGA (15-30%)
UNPREDICTABLE

Change in Doppler pattern from diagnosis (≈20w) to delivery in <10%
Lee 04, Vanderheyden 05, Gratacós 04, 07, Ishii 09

Quintero 03, Gratacós 04, Vanderheyden 05, Huber 06, Ishii 09,
Di Tomaso 2015, Rustico 2016

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MC twins type III - GA@birth 34w

<table>
<thead>
<tr>
<th></th>
<th>AGA</th>
<th>SGA</th>
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<tbody>
<tr>
<td>Birthweight (g)</td>
<td>2010</td>
<td>980</td>
</tr>
<tr>
<td>NN evolution</td>
<td>RDS</td>
<td>Minimal support</td>
</tr>
<tr>
<td>NN scan</td>
<td>PVL III</td>
<td>Normal</td>
</tr>
</tbody>
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MC-sIUGR and brain injury on neonatal ultrasound

**TYPE I**

GA at delivery 35w
Normally good prognosis

**TYPE II**

Type II (n=57)

**TYPE III**

Type III (n=74)

Quintero 03, Gratacós 04, Vanderheyden 05, Huber 06, Ishii 09, Di Tomaso 2015, Rustico 2016

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Conclusions

sIUGR in MC twins and brain damage

1. Brain damage in a potential complication in MC-sIUGR, with special risk for AGA

2. Mechanism possibly related with acute episodes of feto-fetal transfusion