Selective intrauterine growth restriction in MC twins

Eduard Gratacós
Department and Research Centre of Maternal-Fetal Medicine
Hospital Clínic-IDIBAPS, University of Barcelona, Spain
1. Clinical forms and diagnosis

2. Expectant vs. active management

3. Technical issues

4. Conclusions
1. Clinical forms and diagnosis

2. Expectant vs. active management

3. Technical issues

4. Conclusions
Chronic unbalanced transfusion
- Twin–twin transfusion syndrome (TTTS)
- Twin anemia polycytemia syndrome (TAPS)

Discordant placental territories
- Selective IUGR

Unidirectional acute transfusion
- Single fetal demise
- Sustained bradichardia in one fetus

Comlications of monochorionic pregnancy
- Discordant Malformation
- High risk
Unequal placental sharing and placental anastomoses (=INTERFERENCE IN NATURAL HISTORY)

selective IUGR (sIUGR)
- EFW < P10 in one fetus
- ≈10 % of MC
MC twins with subjective discrepancy in size or AF
Algorithm for differential diagnosis

AF: > 8 cm (>10 cm) / < 2 cm
- Yes: TFF
- No

EFW < p10 (± D-EFW > 25%)
- Yes: sIUGR
- No

Vmax-MCA > 1.5 / < 0.8 MoM
- Yes: TAPS
- No: AF discordance, EFW discordance, Closer follow-up
Latency

- Very long
- Short (but unstable)
- Very long

GA@delivery

- High (>34)
- Low (<32)
- High (>34)

Survival IUGR

- Very high
- Low
- High

Hemodynamic accidents

- Very low
- Very low (Only if IUFD)
- High
MC + sIUGR (EFW<P_{10})

Doppler N

AREDF

Poor prognosis: high risk of IUFD and neurological damage for both twins

iAREDF

Normally good prognosis

No change in Doppler pattern from diagnosis (≈20w) to delivery

Lee 04, Vanderheyden 05, Gratacós 04, 07

Quintero 03, Gratacós 04, Vanderheyden 05

TYPE I

TYPE II

TYPE III

Gratacós 07
MC + sIUGR (EFW<P_{10})

Doppler N

Previously good prognosis

Poor prognosis: high risk of IUFD and neurological damage for both twins

Latency Dx-Delivery 11 w (3w singletons)

Deterioration IUGR<32w

\[ \approx 90\% \quad \approx 15\% \]

Earlier GA@delivery (29w)

High risk IUFD of IUGR (predictable)

Later GA@delivery (32w)

10-15% IUFD of IUGR (unpredictable)

10-20% Brain injury

Quintero 03, Gratacós 04, Vanderheyden 05, Ishii 09
1. Pathophysiology and clinical forms

2. Expectant vs. active management

3. Technical issues

4. Conclusions
Poor prognosis: high risk of IUFD and neurological damage for both twins.

**TYPE I**
Doppler N

**TYPE II**
ARED F

**TYPE III**
iARED F

MODULATORS
- Severity
- Parents’ wishes
- Technical issues

EXPECTEDANT
CORD OCCLUSION
LASER
sIUGR is not a unique disease as TTTS

FACTORS INFLUENCING MANAGEMENT STRATEGY

Severity

Severe early discordance
Pronounced REDF

Moderate discordance
Telediastolic AEDF

Cord Occlusion
Laser
Expectant

Parents’ wishes

Technical issues
1. Pathophysiology and clinical forms

2. Expectant vs. active management

3. Technical issues

4. Conclusions
LASER THERAPY IN sIUGR

Technically feasible >90%
But more difficult than TTTS

- absence of polihydramnios (amnioinfusion/drainage required)
- equator often in smaller sac
- type and size of anastomoses

Quintero, Gratacos, Chaloui
1. Pathophysiology and clinical forms

2. Expectant vs. active management

3. Technical issues

4. Conclusions
sIUGR in MC twins
expected outcomes with different management schemes

<table>
<thead>
<tr>
<th></th>
<th>Expectant</th>
<th>Laser</th>
<th>Cord Occlusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA@delivery</td>
<td>29-32</td>
<td>33-35</td>
<td>32-34</td>
</tr>
<tr>
<td>Survival</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGA</td>
<td>70-85 %</td>
<td>70-90 %</td>
<td>&gt;90 %</td>
</tr>
<tr>
<td>IUGR</td>
<td>50-85 %</td>
<td>30 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Sequeleaes (*)</td>
<td>10-30%</td>
<td>&lt;5%</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>AGA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IUGR</td>
<td>25-50%</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>

(*limited info - small series)

Quintero 03, Gratacós 04–10, Vanderheyden 05, Ishii 09, Chaloui 12
CONCLUSIONS
Management of sIUGR

1. Proper diagnosis.
2. Doppler UA.
3. Abnormal Doppler has a poor prognosis.
4. Active management improves outcome of larger twin but worsens that of smaller.
5. Decision is a balance between severity, parents’ wishes and technical issues.
6. RCT is very unlikely to change current clinical scenario.