SGA/IUGR

vs

early/late-onset

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The discovery of UA and hemodynamics of IUGR

Constitutionally small → SGA
Placental insufficiency → IUGR
Extrinsic cause
Primary fetal defect

IUGR = abnormal UA Doppler

UA Doppler + (EARLY-ONSET)
UA Doppler N (LATE-ONSET)

Savchev 2013

www.fetalmedicinebarcelona.org/
Prognostic criteria of “poor outcome”-SGA

CS for distress and/or neonatal acidosis

UtA >p95

CPR <p5

EFW CENTILE <3

N=447 SGA + 447 controls

Figueras 2013
Late-onset IUGR vs. SGA

40% of late-SGA with 11% risk (14% of all adverse outcomes)

60% of late-SGA with 40% risk (86% of all adverse outcomes)
Distribution of cases when IUGR = abnormal UA Doppler

Savchev 2013
Distribution of cases when IUGR = abnormal CPR or UtA or EFW

Savchev 2013
IUGR = low CPR or high UtA or EFW<3 or low PlGF

<table>
<thead>
<tr>
<th>EARLY IUGR (1%)</th>
<th>LATE IUGR (5-7%)</th>
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</thead>
<tbody>
<tr>
<td><strong>PROBLEM: MANAGEMENT</strong></td>
<td><strong>PROBLEM: DIAGNOSIS</strong></td>
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<tr>
<td>Placental disease: high (UA+, PE high)</td>
<td>Placental disease: low (UA-, PE low)</td>
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<tr>
<td>Hypoxia ++: systemic CV adaptation</td>
<td>Hypoxia +/-: central CV adaptation</td>
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<tr>
<td>Tolerance to hypoxia. Natural history</td>
<td>Low tolerance: no natural history</td>
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<tr>
<td>High mortality and morbidity</td>
<td>Low mortality but poor long outcome.</td>
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</tbody>
</table>
The first step is SGA vs IUGR

\[ \text{EFW} < p_{10} + (\text{CPR or UtA or } < p_{3}) \ (\pm \text{low PlGF}) \]

Early vs late-onset differentiates two main phenotypes/clinical problems within IUGR.