Third trimester screening?

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THIRD TRIMESTER SCREENING FOR WHAT?

1T: screening Down + early-onset placental disease

2T: fetal defects + screening PL

3T: screening of late-pregnancy complications

LATE-ONSET IUGR

STILLBIRTH

LATE-ONSET PREECLAMPSIA

Fetal Programming

Perinatal Outcome

Maternal complications

Increased Costs

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ROUTINE ULTRASOUND IN THE THIRD TRIMESTER DOES NOT IMPROVE PERINATAL MORTALITY (N=23,000)
Cochrane 2008

Serial fundal height measurement

Third-trimester US

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Detection of malformations
(Radius 21% - Helsinki 80%)

Screening of aneuploidies
(DR ranging 40 to 93%)

ROUTINE ULTRASOUND IN THE THIRD TRIMESTER DOES NOT IMPROVE PERINATAL MORTALITY (N=23,000)
Cochrane 2008

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n = 26,968

Lindquist and Molin, 2005

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IMPACT OF NON-DETECTED IUGR ON LATE FETAL MORTALITY
Barcelona 2005-2010

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Classification of stillbirth by relevant condition at birth (ReCoDe): population-based cohort study
Gardosi et al. BMJ 2005 and 2013

IUGR as relevant condition identified in 43-60%

Overall stillbirth rate (/ 1000 births) 4.2, but only 2.4 in non-SGA pregnancies, increasing to 9.7 with antenatally detected IUGR and 19.8 in not detected IUGR.
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 2012
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Controls 8%

All normal 11%

Any abnormal 40%

Figueras 2012
Distribution of cases when IUGR = abnormal CPR or UtA or EFW <p3

Savchev 2013
Induction of labour associated with improved maternal outcome with similar neonatal results, and should be advised for women with mild hypertension beyond 37 weeks’ gestation (level A recommendation)
Detecting SGA/IUGR reduces morbidity and stillbirth
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COULD INTEGRATED 3T SCREENING CHANGE SOMETHING?
Prediction of PE

INTEGRATED FIRST TRIMESTER APPROACH
maternal features + UtA Doppler + biomarkers

Detection Rates (for FPR 10%)

<table>
<thead>
<tr>
<th>Early PE</th>
<th>Late PE</th>
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<tr>
<td>80-90%</td>
<td>40-55%</td>
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Prediction of PE in the 2dn T
(Main aim: selection of high risk cases + adjusting care)

PE/IUGR <32w

- Uterine: s 48% e 95%
- sFlt1/PIGF: s 79% e 95%
- Ut + sFlt1/PIGF: s 84% e 95%
Prediction of PE in the 2dn T
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- PE/IUGR >32w
  - Uterine: s 26% e 80%
  - sFlt1/PIGF: s 26% e 80%
  - Ut + sFlt1/PIGF: s 52% e 80%
Prediction of PE

THIRD TRIMESTER APPROACH
maternal  OR  UtA Doppler  OR  biomarkers

Detection Rates (for FPR 10%)
Prediction of PE

THIRD TRIMESTER APPROACH
maternal  OR  UtA Doppler  OR  biomarkers

Detection Rates (for FPR 10%)

LATE PE
70-75 %
Prediction of PE

32-34w

PE

THIRD TRIMESTER APPROACH
maternal  OR  UtA Doppler  OR  biomarkers

Detection Rates (for FPR 10%)

Lai et al. Fetal Diagn Ther 2013
(BP, UtA Doppler, sEng)

Chaiworapongsa et al. AJOG 2013
(PIGF, sFlt-1, sEng)

LATE PE
70-75 %

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IMPROVING DETECTION: THE DEFINITION OF “RESTRICTION”
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Mula 2013, Lobmaier 2013
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INTEGRATED 3T SCREENING FOR LATE-PREGNANCY COMPLICATIONS
Late-PE, Late-IUGR, Stillbirth

Mula 2013, Lobmaier 2013
We will not detect everything in the 1st T

A 3rd T screening would be required to effectively implement the inverted pyramid of care (particularly for PE)

Detection of (late) IUGR improves perinatal outcomes and stillbirth

Integrated 3rd T screening strategies will improve substantially performance of clinical and US monitoring
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CLINICAL IMPLICATIONS: IF 3T US WAS NOT DISCONTINUED IN YOUR SETTING, I WOULD RECONSIDER