



Third trimester scanning:


Remit for fetal growth assessment
in high risk pregnancy

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1. Confidential Enquiry into Stillbirths with IUGR

- Birmingham & Black Country project
- Full Report: www.pi.nhs.uk/rpnm/CE_SB_Final.pdf




B&BC Confidential Enquiry on Stillbirths with IUGR

Background

- 28 cases reviewed over 12 months
- Independent panel (bank of 26 clinicians from outside B&BC)
- Inclusion criteria - Stillbirth 30+ weeks, diagnosed with IUGR via:
 - antenatal diagnosis
 - Via post mortem
 - <10th customised centile
- Exclusion criteria - Congenital anomaly, <30 weeks


Proforma



perinatal
institute
for maternal and child health

**Reducing Perinatal Mortality
Confidential Case Review**

Do NOT keep any duplicates or copies of this form
Do NOT enter names or signatures



Ref.

Section A - Case Details

A1 Case Summary Age ____ Gravida ____ Para ____ BMI ____ Outcome ____ at ____ Gestation

A2 Mother's Details

Marital Status

Ethnic Group

English speaking? Yes No

Occupation

Housing

A3 Partner's Details

Age

Ethnic Group

Occupation

Consanguineous relationship? Yes No

A4 Social Details

Smoking	Alcohol	Non-medical drugs
Smoking during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No	Alcohol during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No	Non-medical during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No
Number per day?	How many units per week?	
Details		
Any reported domestic violence? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Details		

page **1**



Methodology

- 2 obstetricians, 2 midwives and specialist's comments (e.g. diabetologist)
- Chaired by director of WMPI and supported by project coordinator and specialist midwife (GROW protocol)
- Assessed for sub-optimal care factors & evidence of good practice
- Consensus opinion of CESDI grading

Grade 0	No Suboptimal care
Grade 1	Suboptimal care, but different management would have made no difference to the outcome
Grade 2	Suboptimal care - different care <i>MIGHT</i> have made a difference (possibly avoidable death)
Grade 3	Suboptimal care WOULD REASONABLY BE EXPECTED to have made a difference (probably avoidable death)

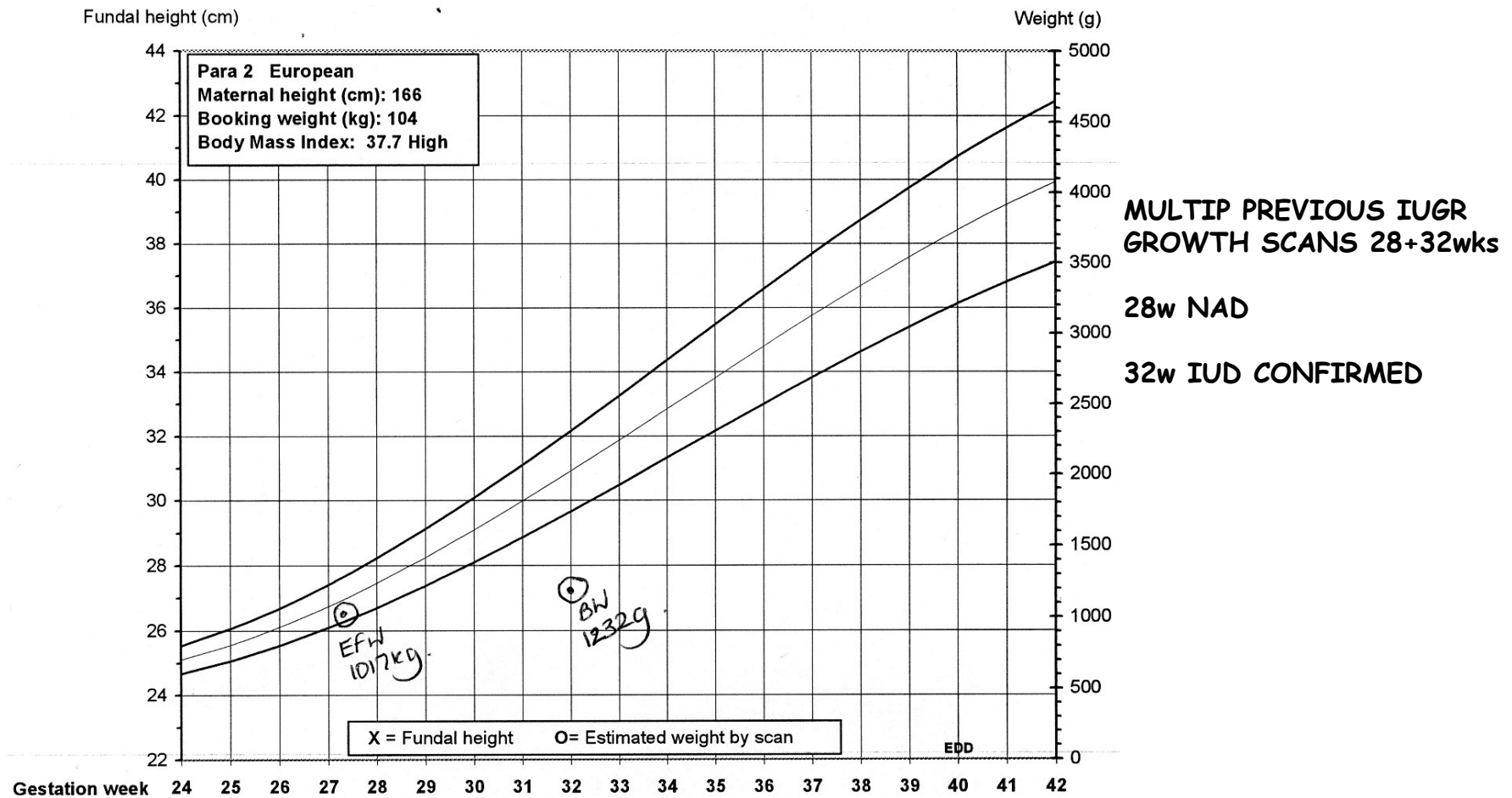


Findings

- 24/28 (86%) potentially avoidable
 - Frequent lack of appropriate risk assessment and management planning
 - No recognition of relevant past obstetric history (IUGR, prem labour, PET)
 - High BMI
 - Fibroids
 - Even when high risk recognised:
 - insufficient or no follow up, or
 - long gaps between serial investigations
 - protocols not followed or
 - **protocols not adequate**
 - Fetal growth assessment
 - No or incorrect use of customised charts
 - No or incorrect measurement and/or plotting of fundal height
 - Inadequate referrals
 - Use of population charts =>missed warnings

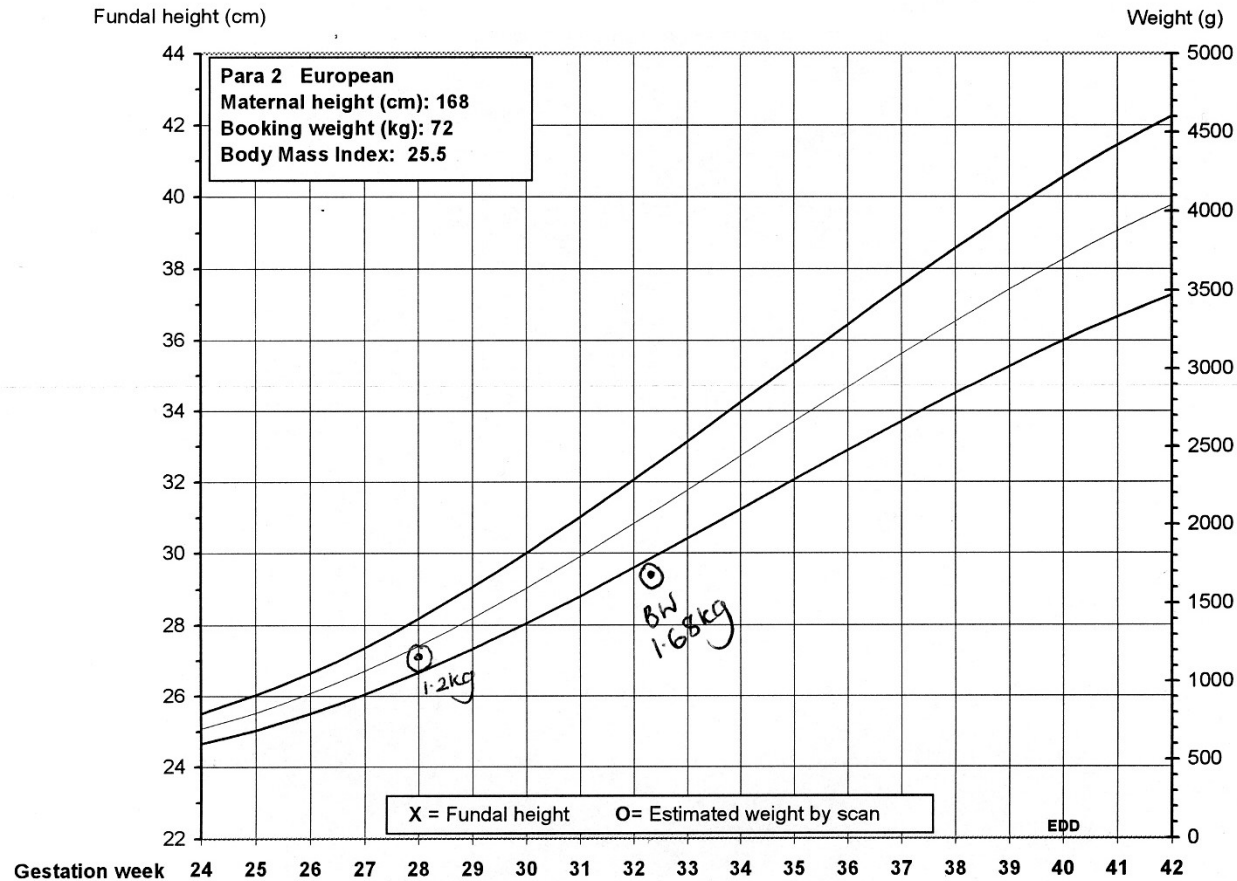
Example 1

CUSTOMISED ANTENATAL GROWTH CHART v 7.4.2U (UK)



Example 2

CUSTOMISED ANTENATAL GROWTH CHART v 7.4.2U (UK)



**MULTIP PREVIOUS IUGR
GROWTH SCANS 28+34wks**

32+2 IUD CONFIRMED



Overall Findings

- 18/28 (64%) were potentially avoidable if appropriate serial scanning was conducted for high risk pregnancies
 - Example 3 - x4 fibroids (1 growth scan at 34 w) - IUD at Term
 - Example 4 - Aged 40 Para 8 (No growth scans) - IUD at 31w
 - Example 5 - Prev IUGR (1 growth scan at 34w) - IUD 33w
 - Example 6 - BMI=36 at booking (No growth scans) - IUD at 31w



Regional Protocols

- Protocols are apparently influenced by what is deemed an affordable burden on ultrasound services
- West Midlands survey: wide variation of scanning for 'high risk':
 - Unit a - 28, 32, 36
 - Unit b - 30, 34
 - Unit c - 34
 - Unit d - 26, 30, 34



Recommendations of the Report

www.pi.nhs.uk/rpnm/CE_SB_Final.pdf

- Regional protocols for scanning for high risk pregnancy
 - Past obs Hx (SGA, PREM, SB etc)
 - Fibroid
 - High BMI
 - Suspected SGA
 - Decreased fetal movement

- Accredited GROW training 2 hour workshops including:
 - questions on general principles
 - fundal height technique
 - plotting scenarios



2. RUG work on regional protocols

Third trimester sub-group:

- Consider the evidence
- Make recommendations on best practice standards

- Stage 1- Optimal standard - assuming no shortage of scans

- Stage 2 - Amend to a more realistic standard



Agreed RUG Standard

(but still aspirational in light of limited resources)

www.pi.nhs.uk/ultrasound/standards/growth.htm

■ If low risk at booking:

- Serial fundal height measurements (2-3 weeks) from 28 weeks
- Fundal height measurements should be plotted on a customised chart (RCOG)
- Regional referral criteria
- Serial scanning to the same frequency is recommended if fundal height measurements is not possible/unreliable:

	<u>Prevalence</u>
□ Polyhydramnios	<1%
□ High body mass index (BMI 35+)	7%
□ Large fibroids (e.g. ≥ 6 cm) or multiple fibroids	<1%



RUG Standard

- If high risk:

- Serial assessment of fetal biometry (every 2-3weeks from 28weeks)
- Uterine artery doppler may be a potential predictor (PET & prematurity) - more research is needed

- Conditions with an odds ratio of ≥ 2 :

	<u>Prevalence</u> [1, 2]
□ Multiple pregnancy	2%
□ Previous history of IUGR*	9%
□ Unexplained stillbirth (excl congenital anomaly)	<1%
□ Chronic maternal disease	
❖ Hypertension / PH PET*	3%
❖ Antiphospholipid syndrome, lupus	<1%
❖ Thrombophylia	<1%
❖ Auto-immune disease	<1%
❖ Renal conditions	<1%
❖ Diabetes (pre-existing)	3%
□ Maternal age 40+	3%
□ Substance misuse (alcohol, drug dependency)	2%

* Multips only



Implications

- Due to overlap between high risk categories: An estimated $\frac{1}{4}$ of all women would require serial scanning
- Increase in ultrasound workload (see service model)
- Increase in antenatal detection of IUGR
- Potential to decrease perinatal mortality & morbidity



References

1. Kleijer ME, Dekker GA, Heard AR. Risk factors for intrauterine growth restriction in a socio-economically disadvantaged region. J MFMNM 2005;18:23-30
2. Stillbirth and Infant Mortality, West Midlands 1997-2005: Trends, factors, inequalities. Perinatal Institute, 2007
www.perinatal.nhs.uk/pnm/WM_SB&IMR_2007report.pdf

Sub-group members

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(Full document on www.pi.nhs.uk/ultrasound/standards/growth.htm)