BJOG An International Journal of Obstetrics and Gynaecology

Royal College of Obstetricians & Gynaecologists

DOI.org/10.1111/1471-0528.18234

www.bjog.org

Abstracts

188

Detecting slow growth by serial fundal height measurement reduces stillbirth risk

Hanna Ellson, Emily Butler, Hannah Taylor, Jemma Mytton, Oliver Hugh, Jason Gardosi

Perinatal Institute, Birmingham, United Kingdom

Objective: Standardised measurement of fundal height (SFH) improves the identification of small for gestational age (SGA) fetuses in low risk pregnancy.[1,2] We investigated the association of stillbirth risk with slow growth determined by serial SFH regardless of fetal size.

Methods: The study cohort consisted of singleton pregnancies with at least two third-trimester SFHs. From the last two measurements, we calculated the projected optimal weight range (POWR)[3] to determine whether the fetus had slow growth. The Figure illustrates a chart with plotted serial SFH measurements and an alert for slow growth.

Results: This low-risk cohort consisted of 222,335 deliveries, including 372 stillbirths (0.167%). The last two SFH measurements were done at an average of 34+2 and 37+5 weeks and indicated slow growth in 16.8% of pregnancies, without being SGA (<10th centile) in 77.1% of cases. Fetuses with slow SFH growth but no ultrasound scan had a significantly increased stillbirth risk: RR 4.27, CI 2.70–6.76. The risk was lower but still significant when slow SFH growth was followed by ultrasound scan: RR 1.67, CI 1.19–2.36. These fetuses were delivered at an average of 39+3 weeks, five days earlier than fetuses that did not have a scan following slow SFH growth (40+1 weeks).

Conclusion: Digital assessment of serial SFH provides an additional parameter for fetal growth surveillance and can reduce stillbirth risk. Pregnancies with slow fundal height growth regardless of fetal size are at increased risk and require urgent referral for further investigation.

References

1. Butler E, Hugh O, Gardosi J. Evaluating the Growth Assessment Protocol for stillbirth prevention: progress and challenges. *J Perinat Med* 2022;50:737–747. https://doi.org/10.1515/jpm-2022-0209

2. Ahmed F, Hanook S, Ismail F, Shah F, Arsalan M, et al. Customized vs standard fundal-height measurements for the detection of small-for-gestational age fetuses in low-risk women: RCT. *Int J Gynecol Obstet* 2024. https://doi.org/10.1002/ijgo.16107

3. Perinatal Institute. Fetal growth rate calculator. 2022. https://www.perinatal.org.uk/growthrate

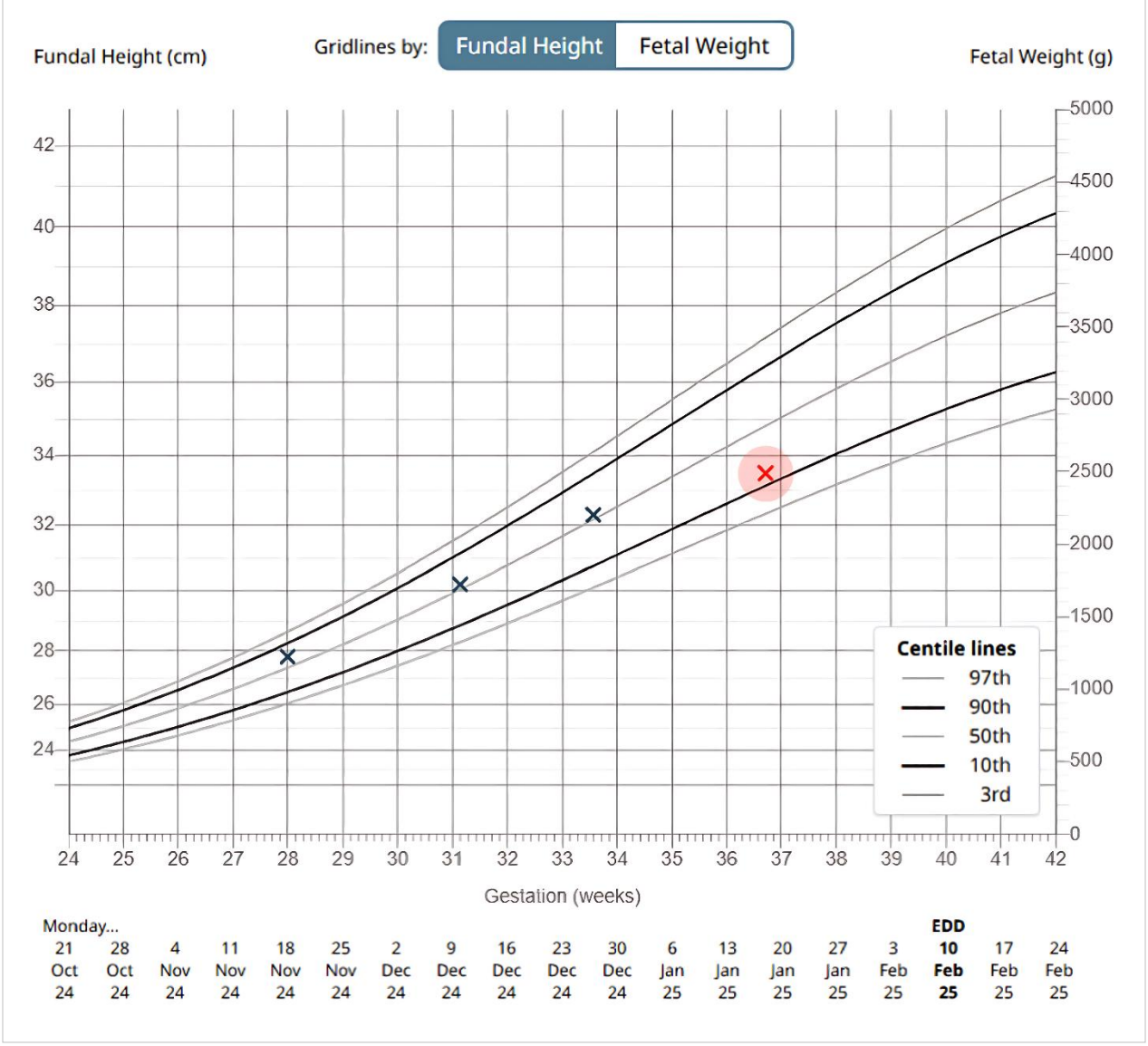
Fundal Height (cm)
Gridlines by:
Fundal Height
Fetal Weight
Fetal Weight (g)
42
40
38
36
34
32
30
28
26
24
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Centile lines
97th
90th
50th
10th
3rd
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
Gestation (weeks)
Monday...
EDD
21 Oct 24
28 Oct 24
4 Nov 24
11 Nov 24
18 Nov 24
25 Nov 24
2 Dec 24
9 Dec 24
16 Dec 24
23 Dec 24
30 Dec 24
6 Jan 25
13 Jan 25
20 Jan 25
27 Jan 25
3 Feb 25
10 Feb 25
17 Feb 25
24 Feb 25

FIGURE 1