



# EVALUATION OF ESTIMATED FOETAL WEIGHTS IN BRONGLAIS HOSPITAL

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# AIMS AND OBJECTIVES

To review data gathered at Bronglais General Hospital to determine acceptable variations in estimated foetal weights (EFW) determined at ultrasound evaluation at term and to correlate them against actual birth weights (BW).

# BACKGROUND

- Completed as part of SSC in March 2020
- Bronglais Hospital, Aberystwyth
- Why this project?

# METHODS

- Data from births within 3 days of ultrasound scan
  - Reasons for scans
- 128 births covering 5/5/18 to 21/1/20
- Exclusion criteria
- Range of births (36+5 → 41+4)
- Birth Weight Range – 2,430g → 5,310g

# HADLOCK FORMULA

$$\text{Log}_{10}\text{BW} = 1.5662 - 0.0108 (\text{HC}) + 0.0468(\text{AC}) + 0.171 (\text{FL}) + 0.00034 (\text{HC})^2 - 0.003685 (\text{AC} \times \text{FL})$$

HC = Head Circumference

AC = Abdominal Circumference

FL = Femur Length

Generally, Hadlock most accurate formula (2)

# RESULTS

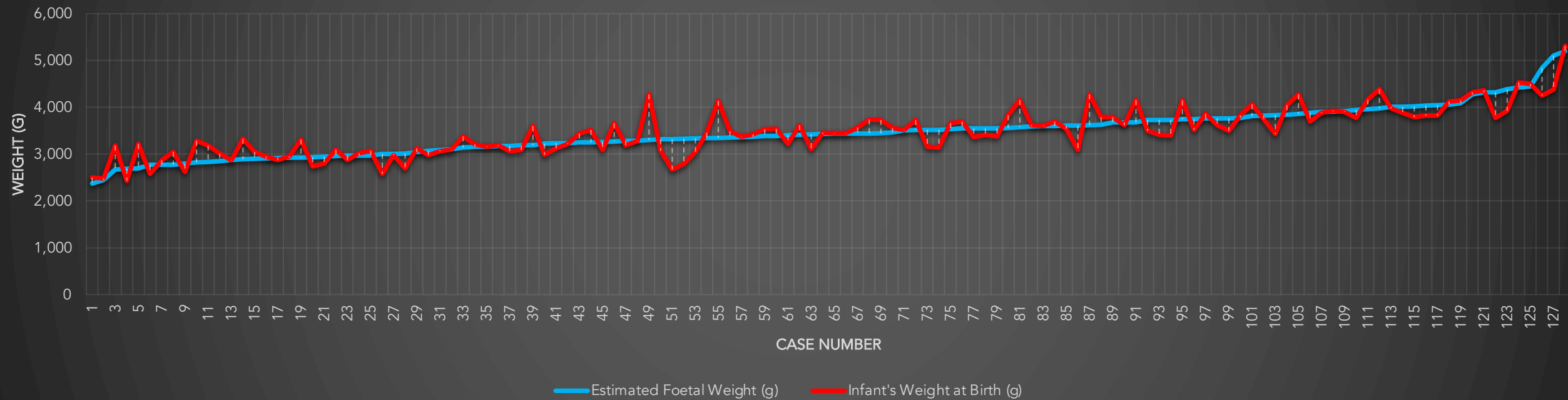
- Average EFW = 3,463g
- Average BW = 3,477g

# RESULTS

- Average percentage difference between EFW and BW was 6.0%
- 18.0% of EFWs within  $\pm 1\%$ .
- 53.1% of EFWs within  $\pm 5\%$ .
- 78.9% of EFWs within  $\pm 10\%$ .
- BW more likely to be underestimated (in 54.7% of cases  $EFW < BW$ ).

# RESULTS

Chart Showing Correlation Between Estimated Foetal Weight and Birth Weight





# RESULTS

- Maximum percentage error was 26.4%
- Noted to be difficult scan
- Subgroup in data (37 cases)
  - Percentage/numerical error given
    - 86.5% cases BW was within this range

# RESULTS

- Potential source of error
  - EFW rounded to the nearest gram, BW rounded to nearest 10g.

# CONCLUSION

- Accuracy of EFW is important for creating an appropriate management plan for foetuses → percentage error minimal.
- Data from Bronglais shows the EFWs are on the whole accurate and within acceptable parameters (i.e.  $\pm 10\%$ ).
- EFW calculations are complex → worthwhile to report on EFWs with a percentage error, as a standard (e.g. EFW = 2,500g  $\pm 5\%$ )

# FUTURE WORK

- Plans to re-audit later this year
- Scope for longer term review of data
  - Extend scan-delivery interval

# ACKNOWLEDGEMENTS

- Mr Alan Treharne,  
Consultant Obstetrician  
and Gynaecologist
- Izabella Middleton and  
Bronglais Hospital  
Imaging Department

The background features a complex, abstract pattern of overlapping, rounded rectangular shapes in various shades of blue (from light to dark) and white. These shapes are arranged in a way that creates a sense of depth and movement, resembling a stylized, pixelated or mosaic-like design. A dark blue horizontal band runs across the lower portion of the image, serving as a backdrop for the text.

ANY QUESTIONS?