

Placental Growth Factor Measurements in the Assessment of Women with Suspected Pre-eclampsia: Association with Preterm Birth

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BACKGROUND

Pre-eclampsia is a major complication of pregnancy and a leading cause of maternal mortality and morbidity. PIGF based testing is valuable in the testing of patients with suspected preterm preeclampsia. However, it is still not readily available in most general hospital in Malaysia.

METHODS

- Retrospective, observational study of women with suspected pre-eclampsia
- Women aged 18–45 years, singleton pregnancy, 20–41 weeks’ gestation, referred with suspected pre-eclampsia
- PIGF measured at the same setting; as it is not routinely available at the centre — only 19 samples taken).
- Groups compared: low (<12pg/mL), intermediate (12-<100pg/mL), and normal PIGF(>=100pg/mL) vs. gestational age at delivery.
- PIGF was chosen as it is still highly sensitive, with good negative predictive value and cheaper in comparison to the SFLT/PIGF ratio.

OBJECTIVE

To show the association between placental growth factor (PIGF) measurement and preterm birth in women with suspected pre-eclampsia.

57.9%

of women studied had low PIGF — the group with the highest risk of preterm birth (mean delivery 30 weeks, p = 0.01)

RESULTS

- Of 19 women, 11 (57.9%) had low PIGF, 5 (26.3%) intermediate, and 3 (15.8%) normal. Compared to the other 2 groups, the group with low PIGF is associated with a higher risk of preterm birth, with mean delivery at 30 weeks.
- Low birth weight (<1500g) seen in 80% of the cases in low PIGF level. Latency to delivery shortened from 54 to 43 to 15 days across the 3 groups
- The low PIGF group also accounted for the most severe individual outcomes — one intrauterine death (26w1d), one hysterotomy (26w3d), and two further same-day deliveries for pre-eclampsia

DISCUSSION

- The latency data supports using PIGF level to calibrate surveillance intensity in managing patients with preeclampsia and low results should trigger near-immediate escalation with increased maternal and fetal surveillance, consideration of antenatal corticosteroids given the short and predictable window to delivery, and early discussion of delivery planning and neonatal unit involvement
- the normal-PIGF group's near-term delivery and low complication burden supports confident outpatient management and avoidance of unnecessary admission for this group

CONCLUSION

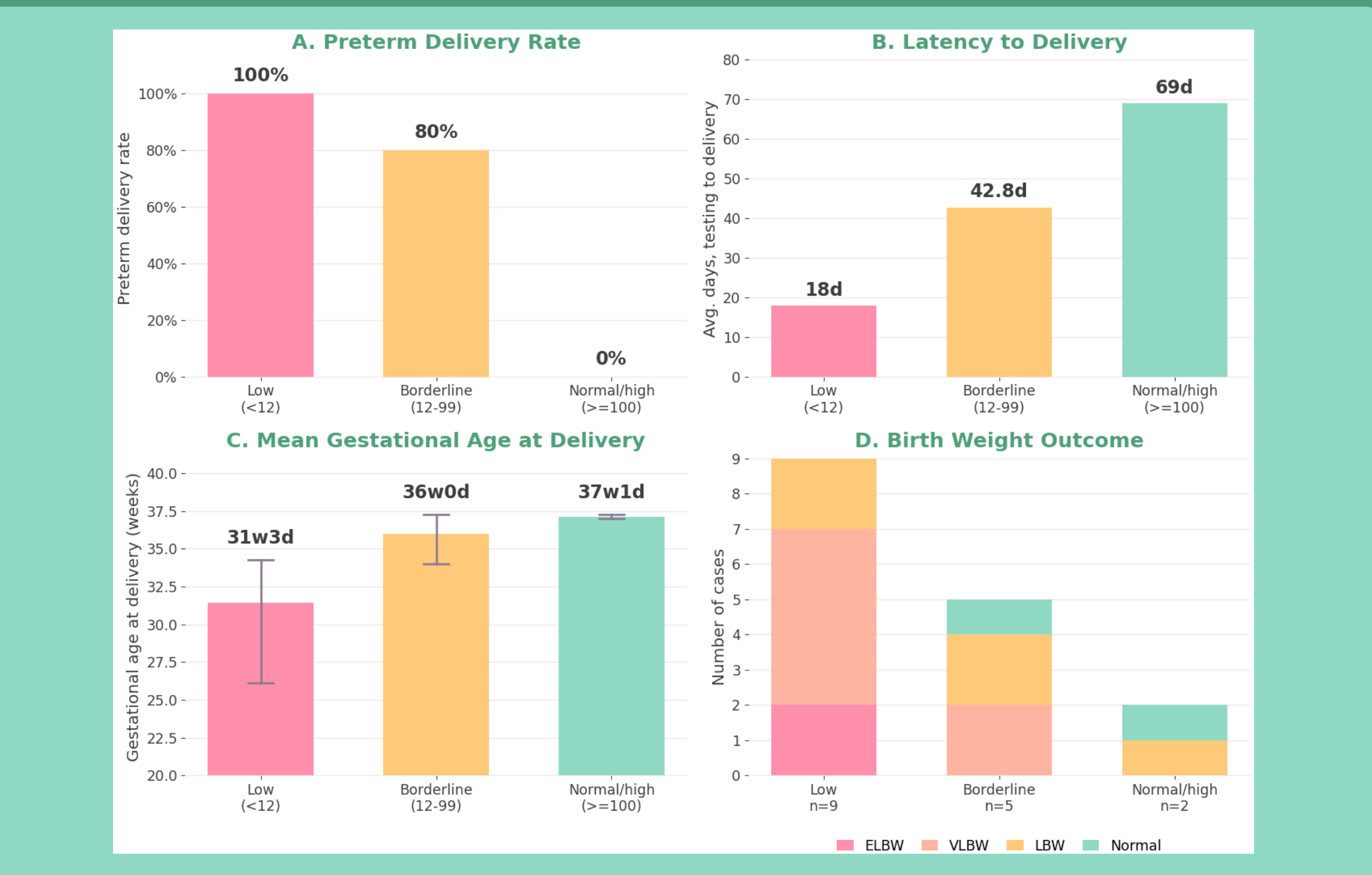
Among women evaluated for pre-eclampsia, those with low PIGF were more likely to deliver earlier. The sample size is small, but this pilot study supports for integration of PIGF testing into routine care at this centre, with larger studies needed to confirm the association.

Figure 1

PLGF category	N	Preterm rate	Avg latency	Birth weight <1500g
Low (<12 pg/mL)	9	9/9 (100%)	~18 days	7/9 (78%)
Borderline (12-99 pg/mL)	5	4/5 (80%)	~43 days	2/5 (40%)
Normal/high (>=100 pg/mL)	2	0/2 (0%)	~69 days	0/2 (0%)

Distribution of PIGF categories among the 19 women studied.

Figure 2



Preterm delivery rate, latency to delivery, mean gestational age at delivery, and birth weight outcome, by PIGF group (n = 16 with a recorded delivery outcome).