Perinatal Outcomes associated with Maternal Placental Growth Factor (PlGF) collected from 12w to 20w6d

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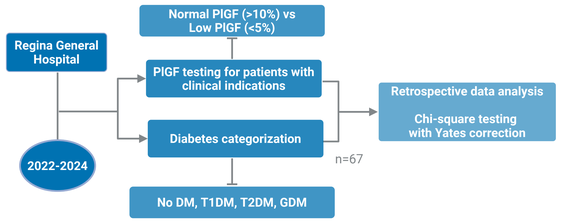
Low levels of PlGF in early pregnancy are associated with the development of **preeclampsia** and **preterm birth**

BACKGROUND

- Placental Growth Factor (PlGF) levels have been shown to decline before the clinical onset of preeclampsia.
- Research on PlGF testing before 21w is limited.
- This study aimed to verify the association between PlGF levels measured during the initial period of pregnancy (12w0d-20w6d) and adverse perinatal outcomes in a population with an elevated prevalence of diabetes.

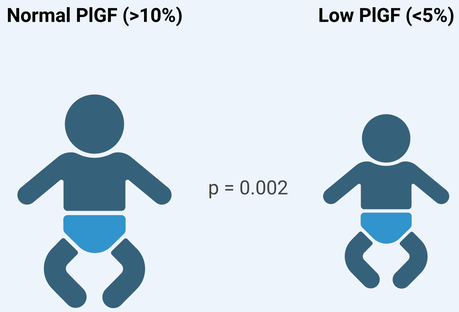
METHODS

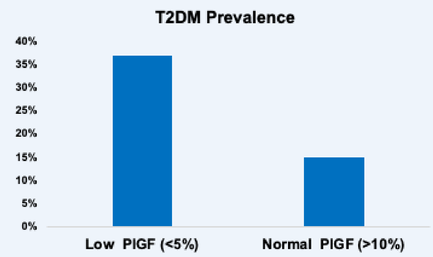
- Retrospective chart review from June 2022-August 2024.
- Adverse outcomes were defined as preterm birth (PTB < 37w), preeclampsia (PET), and low birthweight.
- Odds ratio (OR) with 95% confidence intervals (95% CI), chi-square, student t-test, and negative predictive value (NPV) were calculated.
- Prevalence of PET of 8% and PTB of 10% reported in the literature were used for statistical analysis.



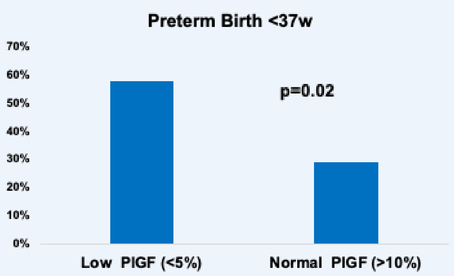
RESULTS

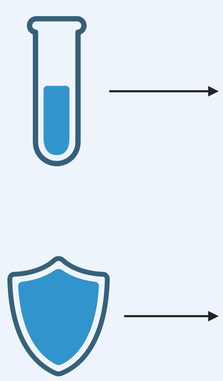
- Prevalence of Type 2 Diabetes Mellitus (T2DM) was higher in those with low PlGF levels (37% vs 15%), but was not statistically significant.
- PTB was higher in those with low PlGF levels (58% vs 29%), and was statistically significant (p= 0.02) with an NPV of 93.8%.
- Mean birthweight in the normal PlGF group was significantly higher than among the low PlGF group (3277.9 g vs. 2638.6 g, p= 0.002).
- Low PlGF levels were significantly associated with PET (p<0.05), and normal PlGF levels demonstrated a high negative predictive value (94.4%) for PET.





Prevalence of T2DM was higher in the low PlGF group but was not statistically significant.





Low PlGF (<5%)
Statistically significant association with preeclampsia

p=0.02

Negative Predictive Value
For preeclampsia

94.4%

Statistically significant with a Negative Predictive Value (NPV) of 93.8% for PTB (<37 weeks).

CONCLUSION

- Prenatal measurement of PlGF levels between 12w0d-20w6d of gestation may help predict the development of PET and PTB < 37w.
- Further research is required to investigate the relationship between PlGF levels and birthweight.
- Incorporating PlGF screening into early pregnancy evaluations could improve the ability to anticipate adverse pregnancy outcomes.

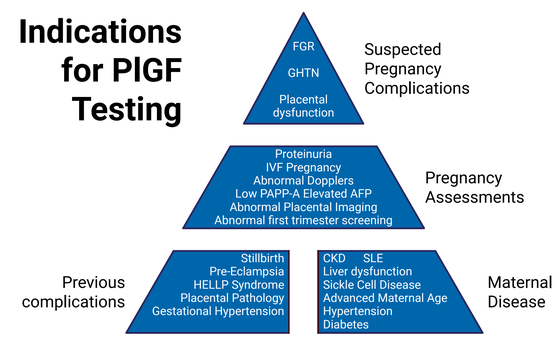
EXTRA INFORMATION

Gestational age (wk)	2.5th centile	Low PlGF 5th centile	Normal PlGF 10th centile	50th centile
12	19	21	25	40
13	23	26	30	49
14	28	32	38	63
15	35	42	49	84
16	45	53	64	110
17	57	67	80	139
18	69	81	96	166
19	80	94	111	191
20	91	106	126	217
21	101	118	141	246
22	110	131	157	280
23	120	144	175	321
24	131	159	196	368
25	140	173	216	420
26	148	186	234	471
27	153	194	248	513
28	153	196	252	539
29	147	189	246	542
30	135	175	229	523
31	119	155	206	489
32	103	134	179	444
33	89	116	155	396
34	78	101	134	349
35	71	90	118	305
36	67	83	106	267

PlGF Levels according to Gestational Age by McLaughlin (2022) *AJOG*

Low PlGF (<5%)

Normal PlGF (>10%)



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