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Postpartum PlGF concentration predicts abnormal blood pressure in early puerperium

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Objective

The angiogenic factors soluble fms-like tyrosine kinase-1 (sFlt-1), placental growth factor (PlGF) and their ratio are useful for prediction of preeclampsia during pregnancy. Their role in the postpartum period is still not clear. The objective of this study was to evaluate the relationship between placental growth factor (PlGF) measured the first day after delivery and postpartum blood pressures (BP) prior to discharge.

Methods

This was a prospective cohort study of patients with singleton gestation admitted for delivery with risk factors for postpartum hypertension. Patients with chronic hypertension or hypertensive disorders of pregnancy were excluded. Abnormal blood pressure was defined as systolic BP ³ 130 mmHg and diastolic BP ³ 80 mmHg, according to 2017 American Heart Association guidelines. PlGF was measured on the first day after delivery and blood pressure was subsequently monitored. Univariable and multivariable general linear model (GLM) was used to evaluate the relationship between PlGF and the difference between the blood pressure recorded at the time of blood test and after 48 hrs (DSBP). The effect of possible covariates was also evaluated.

Results

A total of 82 patients were enrolled, of which 17 (20,7%) had abnormal blood pressure at 48 hours after delivery. The delta of systolic blood pressure (DSBP) ranged between 0 and 28 mmHg (median 8 mmHg). PlGF values were inversely correlated with DSBP (p value < 0.01). Out of all the possible covariates, primiparity and BMI at delivery were also positively associated with a higher DSBP (p value < 0.01).

Conclusion

PlGF can be predictive of abnormal blood pressure in the immediate postpartum period in women with a normotensive pregnancy. Women with lower PlGF values dosed at the time of delivery may benefit from closer surveillance.

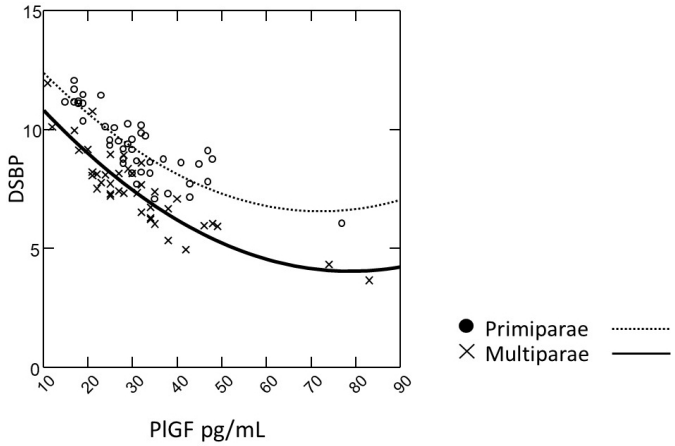

Fig 1 – Multivariable distribution of delta systolic blood pressure (DSBP) vs. PlGF stratified for parity and adjusted for BMI at delivery