

Angiogenic biomarkers for prediction of adverse outcome in neonates in women with suspected preeclampsia (EP17.30)

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Objectives

This study aims to investigate the association between the sFlt-1/PIGF ratio of pregnant women with suspected preeclampsia taken within four weeks of delivery and adverse neonatal outcomes.

Methods

Pregnant women presenting with clinical features of suspected preeclampsia between January 2020 and May 2023 were recruited and sFlt-1 and PIGF were analyzed. Neonatal outcomes were compared between neonates from pregnancies with sFlt-1/PIGF ratio ≥ 85 (the high-risk group) and those with sFlt-1/PIGF ratio < 85 (controls).

Results

-52 neonates in the high-risk group and 106 controls were included in the study

-Logistic regression analysis showed that sFlt-1/PIGF ratio ≥ 85 was significantly and independently associated with adverse neonatal outcomes

-SGA aOR=2.52, 95% C.I.=1.12-5.60, p=0.03

-feeding intolerance aOR=3.03 95% C.I.=1.01-9.09, p=0.04)

-need for parenteral nutrition aOR=11.19, 95% C.I.=2.23-56.29, p=0.003

-prolonged PN for over 7 days aOR=6.92, 95% C.I.=1.43-33.39, p=0.016

-hyponatremia aOR=14.2, 95% C.I.=1.53-133.25, p=0.02

-hospital stay over 7 and 30 days, aOR=3.62, 95% C.I.=1.20-10.87, p=0.02 and aOR=7.04, 95% C.I.=1.08-45.80, p=0.02 respectively

Outcome	Elevated sFlt-1/PIGF (n= 56)		Preeclampsia (n= 81)	
	aOR (95% C.I.)	p-value	aOR (95% C.I.)	p-value
Small for gestation (SGA)	2.52 (1.12 – 5.60)	0.03*	0.66 (0.30- 1.47)	0.31
Respiratory distress syndrome (RDS)	1.01 (0.22 - 4.54)	0.99	0.29 (0.05- 1.83)	0.19
Transient tachypnea of newborn (TTN)	0.65 (0.09 – 4.74)	0.68	2.33 (0.35 – 15.50)	0.38
Apnoea of prematurity	1.54 (0.48 – 4.76)	0.47	2.04 (0.55 – 7.69)	0.29
Respiratory support	2.13 (0.72 – 6.25)	0.17	0.54 (0.16 – 1.89)	0.34
Feeding intolerance	3.03 (1.01 – 9.09)	0.04*	0.80 (0.21 – 3.03)	0.74
Need for PN	11.19 (2.23 – 56.29)	0.003*	0.43 (0.06 – 3.11)	0.41
Prolonged PN (> 7 days)	6.92 (1.43 – 33.39)	0.02*	0.32 (0.05 – 2.33)	0.26
Hypoglycaemia	0.69 (0.32 - 1.51)	0.36	0.88 (0.42 – 1.80)	0.73
Hyponatremia	14.27 (1.53 – 133.25)	0.02*	0.48 (0.07 – 2.37)	0.37
Clinical sepsis	1.41 (0.41 – 5.00)	0.58	1.51 (0.41 – 5.58)	0.53
Admission to NICU	1.79 (0.69 – 4.60)	0.20	1.26 (0.45 – 3.51)	0.79
Prolonged length of hospital stay > 7 days	3.62 (1.20 – 10.87)	0.02*	0.75 (0.25 – 2.23)	0.59
Very prolonged length of hospital stay > 30 days	7.04 (1.08 – 45.80)	0.02*	0.07 (0.01 – 0.79)	0.03*

Conclusion

In neonates delivered from pregnancies complicated by suspected preeclampsia, an elevated sFlt-1/PIGF ratio serves as a useful predictor of adverse neonatal outcomes, including SGA, gastrointestinal and metabolic complications, and prolonged hospitalization, which are independent of the effects of prematurity.