Glycosylated Fibronectin as POC(point of care) test into clinical practice for Prediction, diagnosis, and management of suspected placental Dysfunction

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Introduction

❑Preeclampsia and fetal growth restriction are part of the Placental dysfunction spectrum which Complicates 10%of all pregnancies leading to maternal and fetal morbidity and mortality.

❑ To date many biochemical and sonological indicators have been studied to predict and prognosticate these conditions at the earliest, but difficult to anticipate the progression of cases

❑These conditions are both characterized by maternal endothelial dysfunction induced by the imbalance of placental factors such as Sflt and PLGF, Glycosylated Fibronectin

Objective

- To assess association between raised GlyFn(Glycosylated fibronectin)in maternal blood and spectrum of placental dysfunction
- To establish the impact of the test in clinical practice compared to age-old methods
- To establish the role in the management of SGA/FGR fetuses

Materials & Methods

It is a retrospective case-control study at a tertiary care center done in 51 cases.

The GlyFn test has been offered in cases with suspected placental dysfunction (hypertension (HTN), pre-eclampsia (PE), and cases of Small for gestational age fetuses(SGA) which were ever-present earlier.

The cases with GlyFn levels more than 350 µg/ml were included in the study group and GlyFn less than 350 µg/ml were included in the control group.

Maternal and fetal outcomes were evaluated and compared in both groups.

Statistical methods : Categorical variables were analysed with Chi square 2 x 2 table and continuous variables were analysed with Student`s t test . P value of < 0.05 was considered as statistically significant

CONCLUSION

➢Our results demonstrate that Glycosylated fibronectin exhibits high performance for predicting maternal and fetal morbidity occurring within a few weeks days of testing.

➢n low-resource settings it will be a useful cost-effective tool for appropriate triage and improved outcomes.

➢This will facilitate early referral to a higher center for a better outcome, before the complication sets in .

➢**Even in the case of isolated fGR, this test is a useful tool, which indicates a requirement for close follow-up with Ultrasound, Dopplers, and clinical correlation, which helps to time the delivery appropriately balancing the risks of prematurity vs the adverse neonatal risks.**

➢**This Biochemical marker can improve accurate clinical stratification and timely management**

➢. Future large studies are required to use this test to determine the need for frequency of monitoring of lab and Ultrasound parameters in hypertension case/FGR s in pregnancy.

Results

N=51

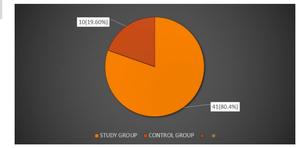
Maternal characteristics were not different in control and study groups (Table 1) .

GA at test is not statistically different but GA at delivery is significantly less in the study group with p value of 0.0008.

FGR is significantly more in study group with p value of 0.0021 and birth weight is also significantly less in study group with p value 0.0009 .

Worsening of maternal or fetal condition leading to delivery of the patient occurred significantly early in the study group with p value of 0.0035 with a mean of 9 days (2 SD 18 days) in the study group and the mean in the control group is 20 days (2SD 26 days).

All eight cases of abnormal PE profile were seen in the study group only with a p value of 0.015 and none in the control group had any abnormal PE profile.



Maternal characteristics

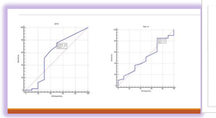
Outcome variables		Control	study	P value/other
Maternal age(yrs)			Median 29(21-37)	IQR(27-32)
Conception	Spontaneous	6(60%)	34(82.9%)	0.114
	ART	4(40%)	7(17.1%)	
Previous H/O PE/FGR		1(10%)	6(14.6%)	0.703
Gestational age(weeks)		Median -31	Median -30	IQR (28-34)
Maternal complications PE, Abruption, Imminent eclampsia		1(10%)	21(41%)	**0.013(significant)**
Development PE within next 1-4 weeks		1(10%)	17(41%)	**0.013(significant)**

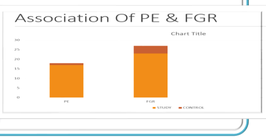
Fetal /perinatal Outcome

		Control	Study	P value/IQR
Fetal growth status	FGR	4	23(53%)	0.52
	SGA	4	8(19.8%)	0.35
	AGA	2	10(24.4%)	0.9
EFW (KG)		1.1-2.7	0.830 -2.4	0.4 IQR-1.65-2.3(study) IQR-1.5-2.4(control)
Dopplers UAD		3(30%)	**22(53.7%)**	0.35

Results

	Control	Study	P value
Worsening of condition leading to delivery in PE group (days)	20.73 (2SD – 26.5)	9.13 (2SD- 18.68)	**0.0035** 95% CI 4.65-19.13
Worsening of dopplers	3	14	**0.0188**
GA at delivery (weeks)	35.46 (2SD- 4.66)	32.485 (2SD-6.5)	0.0008 95% CI 1.35-4.6
Birth weight	2.22 (2SD-1.4)	1.48 (2SD- 1.4)	**0.0009** 95% CI 0.33-1.15
Intra uterine fetal death	0	1	1.000
Neonatal mortality	0	0	1.000





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