ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

GLYCOSYLATED FIBRONECTIN IN 1ST TRIMESTER AS A MARKER TO PREDICATE FUTURE PRE ECLAMPSIA.

KEY WORDS:

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Present Knowledge

- Hypertensive disorders of pregnancy are responsible for over 60,000 maternal deaths worldwide annually and complicate 5-10% of all pregnancies
- The cause of the disease is unconclusive, but recent data suggest that one possible contributing factor might be endothelial injury.
- the endothelial injury is limited to the uteroplacental circulation in pregnant women with intrauterine growth retardation (IUGR). whereas it is systemic or more generalized in women with preeclampsia
- various angiogenic/antiangiogenic markers such as soluble vascular endothelial growth factor receptor 1 (sFlt1), placental growth factor (PlGF), and soluble endoglin have been employed to develop single- or multi-analyte tests that may predict preeclampsia[3,4]
- serum fibronectin is strongly assosciated with pre eclampsia[5]
- Fibronectin belongs to a family of large glycoprotein's (440-500 kDa). Its physiological functions include cell adhesion, cell motility, and tissue repair. It also acts as a substrate for several coagulation and fibrinolytic enzymes and is involved in haemostatic mechanisms.
- Fn is an abundant protein with a wide spectrum of functions. As a result of alternative slicing and proteolysis, the Fn gene encodes a collection of isoforms that differ in sequence and length. One of these isoforms is fibronectin, which contains an extra type-3 domain (ED1 +) found in large vessel and endothelial cells and in platelets
- The majority of the Fn present in serum or plasma is termed plasma Fn (pFn), which is produced and secreted in a soluble form by hepatocytes, while so-called cellular Fn (cFn) is produced by numerous cell types, including fibroblasts, endothelial cells, and smooth muscle cells.
- Both pFn and cFn exhibit complex patterns of glycosylation
- Few studies evaluated the utility of maternal serum glycosylated Fn (GlyFn) as a potential biomarker for preeclampsia risk and for monitoring its progression[2,6]
- patients with severe preeclampsia and laboratory signs of organ involvement [raised liver enzymes, disturbed coagulation (reduced platelets or low AT)] and/or kidney involvement (raised serum creatinine) would show higher fibronectin levels as a sign of a greater degree of endothelial injury than those without such signs.
- The best sensitivity and specificity for prediction of preeclampsia were found to be at a cutoff for GlyFn of 176.4 mg/mL.

Need For Study:

- Gylcosylated finronectin is an early predictor of preeclampsia[2,6]
- Due to high incidence of preeclampsia which is usually diagnosed after 24-28 weeks POG,early diagnosis and identification of women at risk for pre eclampsia helps in close monitoring which reduces the maternal morbidity and mortality and can limit ongoing disease process.
- It also helps in identifying the foetuses at risk for IUGR which is a common complication of preeclampsia.

AIMS AND OBJECTIVES:

a)**AIMS :**

- To detect the diagnostic efficacy of glycosylated fibronectin in first trimester in predicting pre eclampsia

b)**OBJECTIVES :**

- To detect the value of serum glycosylated fibronectin in first trimester (6-14 weeks)
- To evaluate its efficacy in predicting pre eclampsia by following the cases to the term.
- The evaluate the maternal and fetal outcome in patients with serum glycosylated fibronectin raised > 176.4 mg/ml.

Detailed Research Plan:

- **Design Of Study:** prospective observational study for a period of 6 months between april 2019 to September 2019
- This observational study will be conducted in Dr. PSIMS &RF tertiary care centre on 35 women

Population And Study Subjects:

Inclusion Criteria:

- Antenatal women in the first trimester between 6-14 weeks attending OBGY OPD
- Antenatal women with previous history of gestational hypertension,preeclampsia,eclampsia,IUGR
- Antenatal woman with the risk factors for preeclampsia (elderly gravida >35 years of age,primi gravida,teenage pregnancy,obesity)

Exclusion Criteria:

- Antenatal women > 14 weeks POG.
- Women with chronic hypertension.
- **Sample Size:** 35
- **Sampling:** Antenatal women in the first trimester between 6-14 weeks attending OBGY OPD at DR.PSIMS & RF.
- **Study Variables:** Age,gravida,occupation,maternal weight, BMI, blood pressure, glycosylated fibronectin, pre eclampsia, eclampsia, IUGR.

MATERIALS AND METHODS

- Informed written consent is taken from all the patients subjected to the test
- Detailed history will be taken,patients will be subjected to general and obstetric examination.
- The patients fulfilling the inclusion criteria will be subjected to a smiple finger prick test perfomed in the OPD.
- **Product Information : LUMELLA POINT OF CARE** blood test.

It utilizes glycosylated fibronectin ,a new pregnancy specific marker to accurately assess risk for developing pre eclampsia.

MASTER CHART

S.NO	MR.NO	AGE	PARITY	POG	BMI	BP	WEIGHT	GLYCOSALATED FIBRONECTIN

PROFORMA

NAME:		MR NO	
AGE:		LMP	
SEX:		EDD	
ADDRESS:		POG	

- CHIEF COMPLAINT:
- H/O PRESENT COMPLAINT:
- OBSTETRIC SCORE: GPLAD
- PAST OBSTETRIC H/O:
- MARITAL H/O:
- HUSBAND'S OCCUPATION:
- MENSTRUAL H/O:
- PAST MEDICAL H/O:
- FAMILY H/O:
- PERSONAL H/O:
- GENERAL CONDITION ON EXAMINATION
- HT: WT: BMI:
- PALLOR: ICTERUS: CYANOSIS: CLUBBING: LYMPHADENOPATHY: EDEMA:
- THYROID: BREAST: SPINE:
- SYSYTEMIC EXAMINATION:
- CVS: RS: CNS:
- LOCAL EXAMINATION:
- P/A
- P/S
- P/V

INVESTIGATIONS:

- CBP
- CUE
- SPOT P/C
- 24 hrs urine protein
- LFT
- RFT
- BT, CT, PT, aPTT, INR
- Glycosylated fibronectin
- Antenatal ultrasound
- Fundoscopy

Consent Form
Participant Consent Form

Participant's Name:
Address & Mobile No:

Title Of The Project:
The details of the study have been provided to me in writing and explained to me in my own language. I confirm that I have understood the above study and had the opportunity to ask questions. I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without the medical care that will normally be provided by the hospital being affected. I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s). I have been given an information sheet giving details of the study. I fully consent to participate in the above study.

Signature of the participant:_____Date:_____

Signature of the witness:_____Date:_____

Consent Form
Consent Form For Participants Less Than 18 Years Of Age

[consent of the parent/legally accepted representative (LAR)]

Participant's Name:
Patient/LAR's name & Relationship :
Address & Mobile No:

Title Of The Project:
The details of the study have been provided to me in writing and explained to me in my own language. I confirm that I have understood the above study and had the opportunity to ask questions. I understand that my child/ward's participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without the medical care that will normally be provided by the hospital being affected. I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s). I have been given an information sheet giving details of the study. I fully consent to participate in the above study.

Assent of child/ward obtained (for participants less than 18 years of age)
(I also consent/do not consent to use my child/ward's stored biological samples for future scientific purposes) – If applicable

Signature of the parent/LAR :_____ Date :_____

Signature of the participant :_____ Date:_____

Signature of the investigator :_____ Date:_____

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