

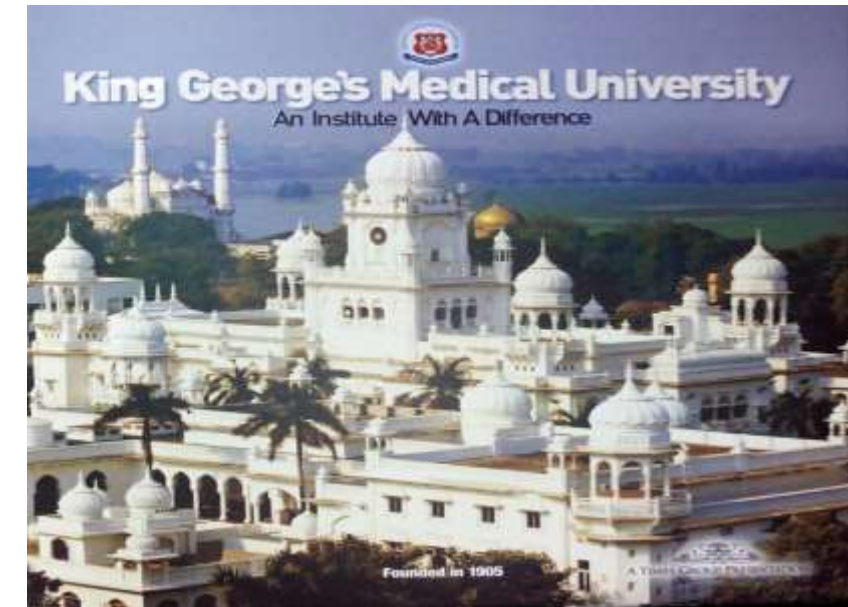
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Serum Fibrinogen As A Predictive Marker In Post-Partum Hemorrhage

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Background

- PPH occurs in about 10-15 % of cases, and it's a major cause of maternal mortality.
- Fibrinogen, a plasma glycoprotein of 340 kDa, synthesized in the liver, is a crucial clotting factor; its reduction may signal the risk of severe PPH.
- Normal range 200- 400 mg%. In the third trimester, it rises to approximately 500 mg/dL. [1]
- A critical fibrinogen concentration (CFF) of < 200 mg% has been recognized as an indicator of impending massive blood loss and massive transfusion by multiple studies.[2,3]. Yet, it lacks its due importance in PPH prevention; henceforth, this study

OBJECTIVES:

1. To estimate the serum fibrinogen level in antenatal women > 28 weeks of gestation.
2. To evaluate the amount of blood loss during delivery.
3. To correlate the serum fibrinogen level with the occurrence of PPH.

METHODS:

Prospective cohort study: (n=195).

Place and time: At the Dept. of Obstetrics and Gynaecology, KGMU, from Jan 2023 to Feb 2024, Approval from the Institutional Ethical Committee, KGMU, Lko (Ref. code-XIV PGTSC-IIA/P75).

195 low-risk pregnant women >28 weeks of gestation were enrolled after screening and subjected to a detailed history and thorough physical examination. A 2 ml venous blood sample was taken to **assess serum fibrinogen level by the Clauss method.**

All the women were followed up till 24 hrs of delivery, and the amount of bleeding /PPH was evaluated by using a graduated V-bag and total pads soaked during delivery. Data was collected and analyzed via SPSS v26.

ACKNOWLEDGEMENT:

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There was no conflict of interest.

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RESULTS:

- **The prevalence of PPH among enrolled (n= 195) subjects was 13.8% (27 cases) .**
- **Among them, 19 (70.4%) had atonic PPH,** and 8 subjects **(29.6%) had traumatic PPH.**
- The mean value of serum fibrinogen **for the PPH group was 304.4±95 mg/dl** and 569.9±89 mg/dl for the non-PPH group, which was statistically significant (**P-value < 0.001**).
- Out of 195 subjects, there were 26 (13.33%) subjects where the fibrinogen level was less than 400 mg/dl.
- Among these 26 cases, 16 (61.53%) subjects developed atonic PPH.

Table 1: Comparison of s. Fibrinogen levels and the occurrence of PPH

Serum Fibrinogen (mg/dL)	Frequency (n = 195)	% of Total	Atonic PPH – No. of Patients (n = 19)	% within Atonic PPH
100 – 200	2	1.03 %	2	10.5 %
200 – 400	24	12.31 %	14	73.7 %*
400 – 600	118	60.51 %	3	15.8 %
600 – 700	42	21.54 %	0	0 %
> 700	9	4.62 %	0	0 %

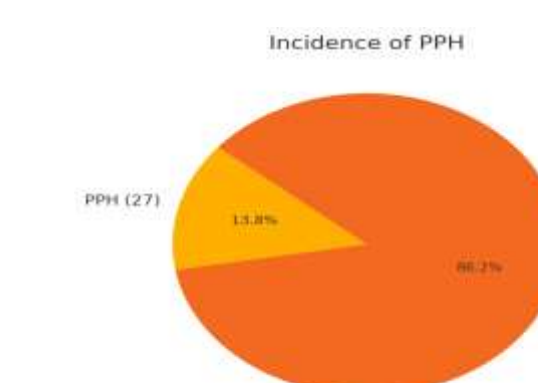


Table 2: Showing risk factors for PPH in the subjects

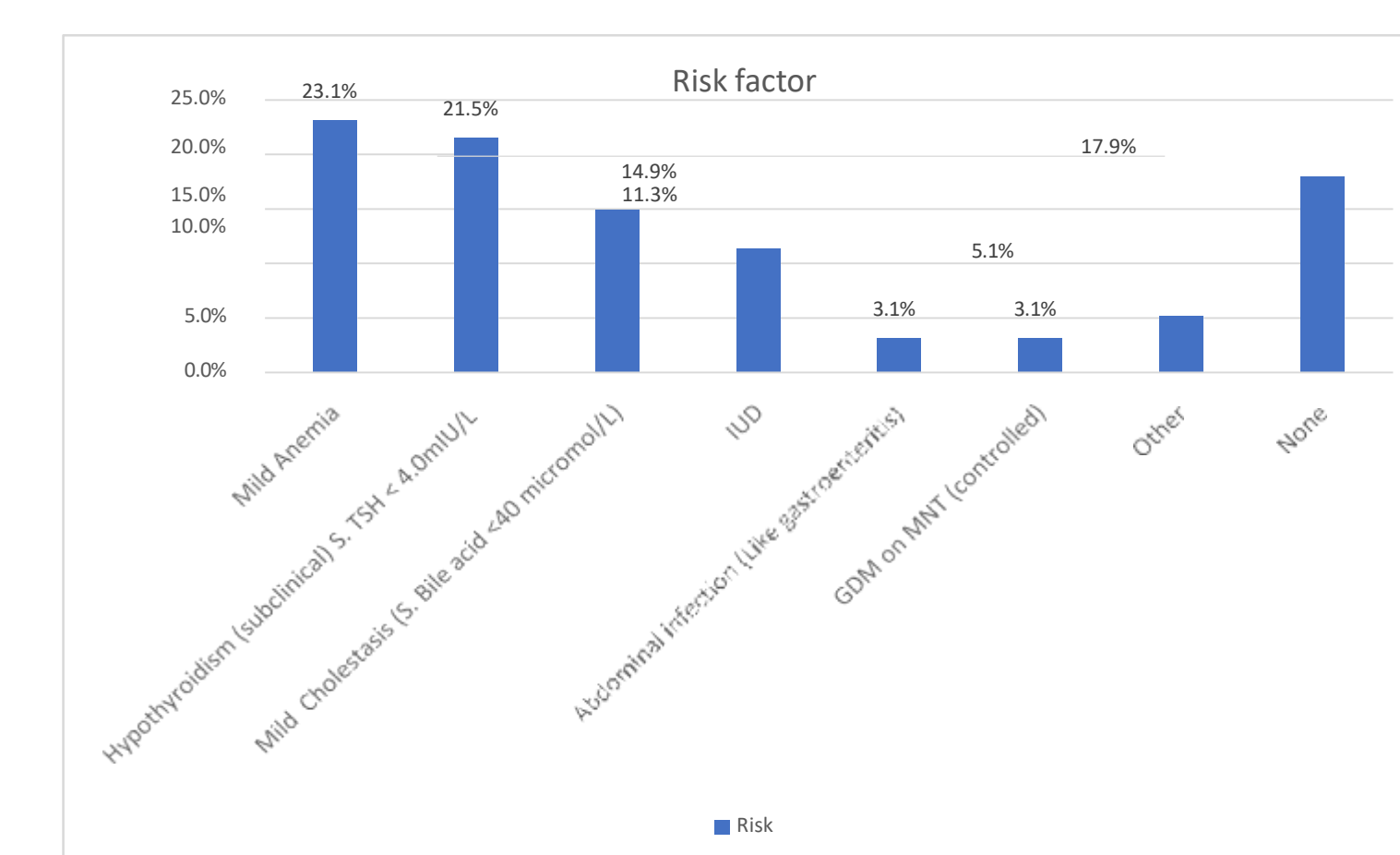


Table 3: Diagnostic accuracy and specificity of s. Fibrinogen with a cut-off level of 395 mg%

Parameter	Estimated Value
Sensitivity	97%
Specificity	84.2%
PPV	84.9%
NPV	89.4%
Diagnostic Accuracy	97.8%

Discussion:

The assessment of s. Fibrinogen is an easy test that can give valuable information regarding the prediction of PPH in more than 60% of cases, with >95% sensitivity and accuracy when we take the cut-off value of 395 mg/mL. Many researchers have concluded that serum fibrinogen could play a vital role in predicting the severity of PPH. We recommend that it may be considered as one of the potential predictive markers of PPH(4).

CONCLUSION-

The study predicts that the pre-delivery value of s. Fibrinogen was low in approximately 60% of atonic PPH be one of the major factors responsible for PPH, so it may be used as a predictive marker to some extent..

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