



STUDY OF FIBRINOGEN LEVEL IN SUDANESE PREGNANT LADIES DURING THE THREE TRIMESTERS OF PREGNANCY

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Article Info <i>Received 15/10/2015</i> <i>Revised 27/10/2015</i> <i>Accepted 20/11/2015</i> Key words: Fibrinogen concentration, Pregnancy.	ABSTRACT This study was aimed at the influence of pregnancy on fibrinogen concentration during the three trimesters of pregnancy. A total of sixty Sudanese pregnant ladies age ranged between 19 – 38 years were recruited, 20 were in their first trimester "A" and 20 in their second trimester "B", 20 in their third trimester "C" blood samples which were collected from each of the participants after obtaining informed consent and were tested for the fibrinogen concentration using clauss method. The study was approved by ethical committee- Alneelain University – faculty of medical laboratory. Independent T - test was used for statistical analysis. The result showed that the mean of fibrinogen level among the pregnant ladies in the first trimester was 450 mg/dl and mean of fibrinogen level among those in the second trimester was 443 mg/dl while it was 457 mg/dl among those in the first trimester. The result of this study concludes that the fibrinogen level was elevated in the third trimester when compared with first and second trimester of pregnancy.
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INTRODUCTION

Fibrinogen is composed of six polypeptide chains (two α -chains, two β -chains, and two γ chains. It is found in plasma and in platelet alpha granules. [1]. Mean plasma level of 2.5 mg/ml with a normal plasma half-life of 90 hours. Fibrinogen is considered to be an acute phase reactant, and as such, it is up-regulated two- to tenfold in response to a variety of physiologic stresses including trauma, pregnancy and tissue inflammation [2].

Platelet aggregation critically depends on fibrinogen binding to activated platelets via the platelet fibrinogen receptor gpIIb-IIIa. Fibrin adhesion to stimulated platelets is also important in thrombus formation [3]. Activation of the coagulation cascades usually associated with activation of the fibrinolytic system, and this is true for preeclampsia [4]. It is known that normal pregnancy is a procoagulant status and that this tendency is increasing during the development of the pregnancy with the end-point of minimizing the blood loss intrapartum. In preeclamptic pregnancies, the coagulation cascade is generally activated [4,5].

This study was conducted to study the changes in plasma fibrinogen, in pregnant women in different trimester.

MATERIALS AND METHODS

Patient

Sixty pregnant women were enrolled in this study from June to October 2015; all the cases were referred to Al Aml National Hospital – Khartoum State.

Informed consent was taken from all subjects enrolled in this study.

Sample collection

3ml of venous blood was collected from each subject and poured into 3.2% trisodium citrate anticoagulant container; platelet poor plasma was prepared by centrifugation at 4000 RPM for 15 min. Fibrinogen level was measured by clauss method according to instructions of company "T.C, Vienna". The clotting time was detected by coagulometer (Biopass).



Data collection and analysis

The data was collected by pre-designed questionnaire and the results was analyzed statistically mean and standard deviation of all variables are calculated, the statistical significance is assured using student T-test, P values less than 0.05 are considered significant.

RESULTS

The result showed that the mean of fibrinogen level among the pregnant ladies in the first trimester was 450 mg/dl and mean of fibrinogen level among those in the second trimester was 443 mg/dl while it was 457 mg/dl among those in the first trimester. The percent study showed that there was no significant difference between first and second trimester in fibrinogen level "P.Value: 0.47" also there was no significant difference between the second trimester and the third trimester " P.Value: 0.166" The mean of age for pregnant ladies in first, second and third trimester was 26.9, 26.2, and 26.05 years respectively and there is no significant association between fibrinogen level and participant`s group.

DISCUSSION

Pregnancy is psychological process with many psychological changes as seen in increased coagulation

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factors. During pregnancy there are significant in changes in coagulation system. The percent study showed that the mean of fibrinogen level is higher among those in the third trimester. The study therefore suggested that increase of fibrinogen factor observed is due to increase in thrombin generation inflammatory state of pregnancy and fibrinogen being an acute – phase protein.

CONCLUSION

The result of this study concludes that the fibrinogen level was elevated in the third trimester when compared with first and second trimester of pregnancy.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

