

A STUDY OF TOTAL PLATELET COUNT, ADHESIVE PLATELET COUNT AND PLATELET ADHESIVENESS IN THREATENED ABORTION†

by

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In normal pregnancy the changes in the coagulation factors and fibrinolysins are unknown in the first trimester, but in second and third trimesters certain alterations are known to occur. There is rise in fibrinogen, prothrombin Factors VII, VIII and IX and phospholipid. The present study is undertaken to study the changes in platelet values in cases of threatened abortion.

Material and Methods

The present study was carried out in the departments of obstetrics and Gynaecology and Physiology of Medical Col-

lege, Jabalpur from Oct. 1973 to Aug. 1974. Twenty-five normal pregnant patients in first and second trimesters of pregnancy were taken as control cases

and 25 cases of threatened abortion were in study group. One c.c. of venous blood was taken and immediately transferred to a glass tube and wax coated tube of identical size and shape. After shaking for 20 minutes platelet count was estimated according to the method of Rees and Ecker. Platelet adhesiveness and adhesive platelet count were then calculated.

Observations

The ages of patients varied from 16 to 40 years. Age and parity had no influence on platelet values in both groups.

TABLE I
Platelet Values in Control Group

	Total platelet count	Adhesive platelet count	Platelet Adhesiveness
Mean	203360	23784	11.5%
Minimum	132000	12000	6.4%
Maximum	26000	42000	21.4%
S. D.	13500	6803	0.45
S.E.M.	26.4	54.8	0.038
% CV	8.6	28.5	0.34

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Comments

In normal pregnancy the functioning of the coagulation and fibrinolytic mechanisms are markedly altered from that found in non-pregnant state, there being in pregnancy an enhanced capacity to form fibrin and at the same time reduced systemic fibrinolytic activity.

Abortion is miniature labour, so

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TABLE II
Platelet Values in Threatened Abortion

	Total platelet count	Adhesive platelet count	Platelet adhesiveness
Mean	226720	28300	11.2%
Minimum	104000	22000	5.2%
Maximum	320000	42000	23.5%
S.D.	14650	7604	0.43
S.E.M.	24.2	17.4	0.034
%CV	6.4	2.7	0.38

changes in platelet values are same as in normal labour. In threatened abortion the platelet count and adhesive platelet counts are higher than in normal pregnancy. Similar findings were observed by Mor *et al* (1960), and Bonnar and Davidson (1969). A possible role of oestrogens has been suggested by a number of workers (Brackmann and Astrup 1964, Brehm 1964, Egeberg and Omeran 1964). Kennan and Bell (1957) attributed these changes to increased requirement of platelets and fibrin for haemostasis.

Talbert and Schander (1964), Nilsson and Kullander (1968), didn't observe any change in platelet values in threatened abortion, While Ratnoff and Pritchard (1955) and Shukla *et al* (1974) noted a fall in platelet values, which they attributed to decrease in plasma protein levels, disintegration of platelets, release of 5-hydroxy-tryptamine and thromboplastinogens to facilitate quick haemostasis.

Platelet stickiness did not show any significant change in threatened abortion. Similar results were reported by Wright (1942), Nilsson and Kullander (1968).

Thus we see that the platelets show increase in threatened abortion, thereby nature prepares for haemostasis required for abortion.

Summary

Total platelet count, adhesive platelet

count and platelet adhesiveness were studied in threatened abortion and compared with normal pregnancy. Platelet values were raised in cases of threatened abortion. This is probably an effect due to oestrogen, thereby nature prepares for haemostasis required in cases of abortion.

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