FIBRIN DEGRADATION PRODUCTS IN NORMAL AND ABNORMAL PREGNANCY

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SUMMARY

The present paper deals with FDP levels in normal and abnormal pregnancy using FDP Thromboscreen kit. The FDP levels were less than 10 ug/ml in nulliparous normal women and normal pregnancy. The FDP levels were found to be elevated in 35 per cent of abnormal pregnancy which included 5 cases each of APH and PPH and 10 cases of PET.

Introduction

Fibrin degradation products are found at low levels in the sera of all healthy individuals. This reflects the dynamic state of the normal fibrinolytic mechanisms present in vivo that control the extent of fibrin deposition. Fibrin degradation products occur in the blood in the presence of diseases associated with systemic fibrinolysis, intravascular coagulation with secondary fibrinolysis. Split fibrin products have recently been found to occur in small amounts during normal pregnancy and in larger amounts in complicated pregnancies (Woodfield *et al*, 1968; Bonnar *et al*, 1959; Hedner and Astedt, 1970; Handerson *et al*, 1970 and Dube et al, 1975). Woodfield *et al* (1968) observed highly significant increase in serum FDP products in normal pregnancy whereas Bonnar *et al* (1959) and Handerson *et al* (1970) observed no significant increase in FDP levels in normal pregnancy. Dube et al (1975) observed normal FDP levels in normal pregnancy with significant increase in FDP levels in pre-eclampsia and eclampsia group.

The present communication deals with our data on FDP levels in normal pregnancy, PET, Antepartum haemorrhage and post partum haemorrhage.

Material and Methods

Serum fibrin degradation products' levels were studied in 5 cases of antepartum haemorrhage and postpartum haemorrhage and 10 cases each of normal pregnancy and ple-eclamptic toxaemia and 5 cases of nulliparous normal women served as control. 2 ml of blood was collected into a venom collection tube containing Bothrops atrax venom (Batroxobin), and was mixed immediately by inverting the tube several times. The venom caused fibrin clot formation within 30 seconds. The sample was allowed to stand at room temperature for 15 to 30 minutes. Serum separation was hastened by ringing the clot or by low speed centrifugation. The kit for FDP Thromboscreen was supplied by Decruz Corporation Bombay. The results were interpreted

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less than 10 ug/ml of FDP when ere was no agglutination in 1:10 and 40 dilution. Agglutination of 1:10 dilud sample only indicates a level between and 40 ug/ml of FDP and agglutinaon of 1:40 diluted sample indicates a inimum FDP level of 40 μg/ml.

bservations

Table I shows serum FDP levels in fferent groups. Serum FDP levels were und to be less than 10 ug/ml in all the ses of nulliparous normal women and rmal pregnancy. In PET cases serum DP levels were found to be elevated in % of the cases with more than 40 ug/ml 20% of the cases studied. 60% of the PH cases showed serum FDP levels ove 10 ug/ml and only 20% showed vels more than 40 ug/ml in APH cases. PPH cases only 20% of the cases show- serum FDP level above 10 ug/ml.

iscussion

Increased concentrations of soluble rin/fibrinogen degradation products ve been demonstrated during normal egnancy (Woodfield *et al*, 1968) hower, Bonnar *et al* (1959) found no signiant increase in serum FDP in pregncy until the onset of labour. In present study serum FDP level was less than 10 ug/ml in normal pregnancy and was found to be normal and these findings are consistent with those of Bonnar *et al* (1959), Hedner and Astedt (1970), Beller and Uszynski (1974), Howie *et al* (1976). Woodfield *et al* (1968) observed highly significant increase in serum FDP in later months of pregnancies and were of the opinion that these changes may be due to alterations in pregnancy not primarily associated with fibrinolysis. Handerson *et al* (1970) also found significantly increased level of FDP in third trimester of normal pregnancy with normal levels in first and second trimester.

Bonnar *et al* (1959) reported raised levels of serum FDP in antepartum haemorrhage. In present study too we observed elevated levels of serum FDP in 60% of the APH cases. However, Jackson *et al* (1955) and Beller and Uszynsk (1979) found no evidence of increased fibrinolytic activity in APH. With the onset of severe APH, intravascular coagulation is initiated but so is fibrinolytic activity with the intensity of fibrinolysis, varying with the intensity of intravascular coagulation. This combination of events accounts for hypofibrinogenaemia, thrombocytopaenia and raised levels of serum FDP which run parallel to those of PET. FDP levels were

TABLE I

howing Fibrin Degradation Products (FDP) Levels in ug/ml in normal pregnancy, APH, PPH and PET

oup	No. of cases	More than 10 μg/ml	10-40 μg	40 μg	Percentage of cases with elevated level of FDP
lliparous normal women	5	5	—	—	0.0
rmal pregnancy	10	10	—	—	0.0
normal pregnancy	20	13	4	3	35.0
PH	5	2	2	1	60.0
PH	5	4	1	—	20.0
T	10	7	1	2	20.0

found to be elevated in only 20% of PPH cases studied and were between 10-40 ug/ml. Bonnar *et al* (1959) found that FDP levels are slightly raised in PPH cases in contrast to the patients with APH in whom very high levels are found. Beller and Uszynski (1974) also found raised levels of FDP in PPH cases and they stated that breakdown products have to be present in concentration of two and a half times higher than the concentration of fibrinogen. The presence of circulation of fibrin breakdown products as the result of fibrinolysis may inhibit coagulation, this in turn can result in PPH by failure of thrombus formation in the vasculature of the uterus.

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