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EFFECT OF ORAL CONTRACEPTIVES ON HEMOSTASIS. A.M. Farag(1), S.F. Bottoms(2), E.F. Mammen(1), M. Hosni(3) and A. Ali(3). Departments of Pathology, Physiology and Surgery(1), Obstetrics and Gynecology(2), Wayne State University, School of Medicine, Detroit, MI, U.S.A. and Department of Obstetrics and Gynecology(3), Al Azhar University, Cairo, Egypt.

Retrospective statistical epidemiological studies have suggested a possible association between the ingestion of oral contraceptives (OC) and thromboembolic disease. Past analyses of the coagulation system have yielded controversial information.

We studied a cross section of 131 women taking different kinds of OC and 36 controls for changes in hemostasis. No significant differences were noted in the levels of fibrinopeptide A (RIA), platelet factor 4, β thromboglobulin (RIA), fibrinogen (Multistat III (MCA), clottable), antithrombin III (MCA, S-2238), α2 antiplasmin (MCA, S-2251), prekallikrein (MCA, S-2302) and fibronectin (MCA, immune turbidometric). However, plasminogen (MCA, S-2251) and protein C antigen (Laurell) levels were significantly elevated ($p < 0.001$ and $p < 0.01$), respectively).

Canonical correlation analysis was used to examine correlations between hemostasis parameters measured and clinical risk factors, such as age, parity, weight, smoking, family history for thromboembolic diseases and estrogen-progesterone dose. There was a significantly negative correlation between family history for thromboembolisms and antithrombin III levels ($p < 0.01$). A positive correlation existed between obesity and fibrinogen and fibronectin levels ($p < 0.001$ for both). The hemostasis data seem to suggest that OC use does not introduce an imbalance in the hemostasis system which fosters "hypercoagulability", and that, if at all, possibly other risk factors determine the incidence of thromboembolisms in OC users. It is suggested that caution be exercised in the use of OCs in patients with a history of thromboembolic diseases and with obesity.

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SELECTED HEMOSTASIS PARAMETERS IN PREGNANCY AND HYPERTENSION. A.A. Saleh(1), A.M. Farag(1), S.F. Bottoms(2), E.F. Mammen(1), M. Hosni(3), A. Ali(3). Departments of Pathology, Physiology, Surgery(1), Obstetrics and Gynecology(2), Wayne State University, Detroit, MI, USA, and Department of Obstetrics and Gynecology(3), Al Azhar University, Cairo, Egypt.

Patients with preeclampsia are believed to have a state of compensated DIC, and especially the differential diagnosis between preeclampsia and chronic hypertension with pregnancy can be difficult. Selected hemostasis parameters were analyzed in 50 women with preeclampsia (P), 50 matched normal pregnant women (N), 14 women with known hypertension and pregnancy (CH) and 13 persons with known chronic hypertension and superimposed preeclampsia (CH + P). None of the patients had clinical evidence of DIC. Platelet counts, mean platelet volume, antithrombin III, α2 antiplasmin and fibrinogen activities and fibronectin were assayed. The following data were obtained:

	N	P	CH	CH + P
Platelet count x 10^3/cmm	223 ± 56	216 ± 85	245 ± 70	190 ± 48*
Mean platelet volume cμ	8.5 ± 0.9	8.9 ± 1.1	8.4 ± 1.2	9.7 ± 1.4*
Antithrombin III %	103 ± 15	93 ± 14*	98 ± 11	95 ± 19
α2 Antiplasmin %	93 ± 14	81 ± 17*	113 ± 23	96 ± 17
Fibrinogen mg/dl	561 ± 152	589 ± 133	660 ± 130	743 ± 320
Fibronectin μg/ml	262 ± 101	414 ± 140**	284 ± 75	468 ± 178**

* $p < 0.05$ ** $p < 0.001$

These data, together with higher levels of fibrinopeptide A, platelet factor 4, β thromboglobulin and D-dimer in the P group suggests increased intravascular coagulation in preeclampsia. Fibronectin levels were markedly elevated only in the patient groups with preeclampsia. Discriminant function analysis of FN values between the groups revealed a 78% diagnostic accuracy for P alone and 74% accuracy for CH + P.

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PROTEIN C AND PROTEIN S IN MILD AND MODERATE PREECLAMPSIA. P. Hopmeier (1), M. Halbmayer (1), H.P. Schwarz (2), F. Heuss (1) and M. Fischer (1). Central Laboratory, Vienna Municipal Hospital, Lainz, Austria (1) and II. Department of Medicine, University of Vienna, Austria (2).

In normal pregnancy, total protein S antigen and activity have been reported to be markedly reduced, whereas protein C level was found unaltered. In contrast, in severe preeclampsia protein C antigen was found to be considerably reduced. The present study was done to clarify whether similar changes in protein C would also be observed for the mild and moderate preeclamptic state and whether there would be any effects on the level of protein S, since no data on this cofactor in preeclampsia have been reported to date. 40 women in the 3rd trimester of pregnancy - 20 with uncomplicated pregnancies and 20 who had developed a mild (n = 14) or moderate (n = 6) preeclamptic condition - were included in the study. All groups were well matched in age and gestational age. In addition, 20 healthy non-pregnant women served as controls. All probands had normal liver (SGOT, SGPT) and kidney (BUN, creatinine) values and no other medication than oral vitamins was used. Classification of preeclampsia was done according to a modification of the gestosis index of Goecke using an 11 grade index system (0 - 11). Protein C antigen was measured by an enzyme-linked immunosorbent assay and protein S by the Laurell rocket technique. For statistics, the Wilcoxon rank sum test was applied.

Group	Protein C antigen (%) (mean/median/range)	Protein S antigen (%) (mean/median/range)
A (moderate preecl.)	109/108/98-118	88/91/82-99
B (mild preecl.)	111/109/83-134	83/90/61-119
C (normal pregn.)	95/98/72-124	74/74/50-97
D (non-pregn. contr.)	92/97/69-125	99/106/63-149
Statist. significance	A - C: $p < 0,01$ B - C: $p < 0,01$	A - C: $p < 0,05$ B - C: NS

We conclude that in comparison to normal pregnancies, protein S is found elevated at least in the moderate, and protein C in the moderate as well as in the mild preeclamptic state.