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POSTER SYMPOSIUM X

Thrombosis: Soluble Fibrin Monomer Complexes in Disease.

SOLUBLE FIBRIN COMPLEXES DURING HORMONAL CONTRACEPTION. F.Asbeck, J.Bebber, and J.van de Loo. Medizinische Universitätsklinik, Münster, W.-Germany.

In a prospective study, 2o healthy women (16-35 yrs.) were treated with an oral contraceptive (o,25 mg D-norgestrel, o,o5 mg ethinyl-estradiol). Derivatives of fibrinogen and fibrin were investigated before the beginning of medication, after the 1st cycle, and after the 3rd cycle. The investigations included: determination of thrombin-clottable protein, cold precipitable protein (4°C), ethanol precipitable protein (11,5%), ethanol gelation test, protamin sulfate test, fibrin-fibrinogen degradation products in serum, and quantitation of high- and low molecular weight derivatives of fibrinogen and fibrin by agarose gel filtration of the fresh patient plasmas.

There was a significant increase of thrombin clottable protein (212 vs. 236 mg/dl, $p<o,oo1$) and an increase of ethanol precipitable protein (117 vs. 168 mg/dl, $p<o,oo3$). There was no change in the cold precipitable protein nor in the paracoagulation phenomena. Fibrin-fibrinogen degradation products were not elevated. By agarose gel filtration, a significant increase in soluble fibrin complexes ($p<o,o2$) could be demonstrated; the highest concentration of the SFC eluted in the position of the dimers.

The study confirms a low grade activation of the coagulation system even in healthy women taking a low dose estrogen containing oral contraceptive.

ANALYSIS OF SOLUBLE FIBRIN COMPLEXES IN PATIENTS WITH INTRAVASCULAR COAGULATION. W. Edgar, C. McKillop, P.W. Howie, C.D. Forbes, C.R.M. Prentice, University Departments of Medicine and Obstetrics and Gynaecology, Royal Infirmary, Glasgow.

We have analysed the polypeptide chain structure of soluble fibrin complexes in patients with pre-eclampsia and during defibrination with ancrod (Arvin). In pre-eclampsia soluble fibrin measured by fibrinogen-sepharose 4B chromatography was increased in comparison with normal pregnant women. The isolated fibrin contained intact α, β and γ chains but no crosslinked γ chains. A correlation ($r = 0.959$ $P < 0.001$) was found between the concentration of soluble fibrin and soluble complexes as measured by agarose gel filtration, suggesting these complexes consist mainly of fibrin-fibrinogen dimers. In vitro, the binding of soluble fibrin to fibrinogen-sepharose depended on the structure of the complexes and temperature. At 37°C intact fibrin, prepared with ancrod, was bound to the column, but fibrin lacking intact α chain could be eluted at 37°C. The soluble fibrin complexes in patients having therapy with ancrod could be separated into two; the greater part had reduced α chain and were eluted from the column at 37°C, whereas the smaller part had intact α chain and remained bound at 37°C. Bio-Gel A5m chromatography carried out at 37°C and 20°C also indicated that the major part of soluble complexes produced during ancrod defibrination were unstable at 37°C.