

Time
16.00
cont.**0828 ISOLATION OF A CROSSLINKED PEPTIDE FROM HUMAN FIBRIN AND DEVELOPMENT OF A RADIOIMMUNOASSAY**

R.Canfield*, B.Lahiri, R.D'Alisa, V.Butler, Jr., H.Nossel and S.Birken, Department of Medicine, College of Physicians & Surgeons of Columbia University, New York, N.Y. 10032. Factor XIIIa introduces up to six crosslinking bonds per molecule of fibrin; the bonds between the γ chains on adjacent fibrin molecules form most rapidly. Since crosslinking is essential for normal hemostasis and is likely to be important in tests to detect thrombosis, we have attempted to develop a radioimmunoassay that exhibits specificity for the γ chain crosslinks. The immunogen consisted of a 54 amino acid, crosslinked peptide, isolated from purified human γ - γ chains following CNBr cleavage, gel filtration on Sephadex G-50 and ion-exchange chromatography on SP-Sephadex. Amino acid analysis and Edman degradation through step 24 confirmed the sequence of Chen and Doolittle (Biochemistry 10: 4486, 1971), and the two degradation steps that failed to liberate the expected PTH-amino acids matched the reported location of the Gln-Lys crosslinks. Antisera were obtained against this immunogen coupled either to bovine thyroglobulin or bovine serum albumin. All antisera elicited bound immunogen that was covalently coupled to ribonuclease radio-labeled with ^{125}I as a tracer. The unlabeled γ - γ crosslinked peptide effectively inhibited binding (0.03-0.08 picomoles for 50% inhibition), while with some antisera up to 500 times more of the 27 amino acid γ monomer peptide was required for the same degree of inhibition. Fibrinogen and fragment D also were poor inhibitors. The results indicate that it is possible by radioimmunoassay to distinguish the COOH-terminal region of the γ - γ dimer from that of uncrosslinked molecules.

Haemorheological Aspects of Thrombosis

Waterloo Room

16.00

0829 BIOPHYSICAL FACTORS OF THROMBOSIS

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In addition to parietal and blood factors, Virchow's classical triad includes stasis which combined with one of the others factors, may cause venous or arterial thrombosis. The author successively consider hemodynamic biophysical factors and rheological factors related to blood.

With regard to hemodynamic factors attention is drawn to the incidence of thrombosis from local modification of blood flow. The type of flow should also be considered and the risk of thrombosis increases in the presence of turbulence, areas of recirculation or Vortex. With regard to blood factors, hyperviscosity must be taken into account and particular attention should be paid to increases of haematocrit, intravascular aggregation of blood cells (sludge) globular factors (membrane elasticity and internal viscosity) and interaction of blood cells on platelets.

Atheromatous deposits or white thrombi may also obey certain rheological parameters (irregularities in the vascular wall, changes in the juxta-arterial layer, microturbulence, stanting areas...) Lastly, with regard to vascular wall, in addition to biochemical and hematologic changes, account must be taken of parietal viscoelasticity, electrical charge of the vascular wall...

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