EVALUATION OF THE ANTIMORTIC PROPERTIES OF SULCOTTIDIL IN PATIENTS WITH SUBSTITUTE HEART VALVES. M. Morpurgo, A. Ferrante, C. Colli De Reys, A. Hurlet, G. Chalant, E. Poulot, P. Jaunain, H. Guenet and E. Massurier. Haemostasis and Thrombosis Research Unit, University of Louvain, Belgium.

Isotopic platelet survival time (FST), platelet count, adhesiveness, aggregation, PF_{4} release, and coagulation parameters were examined in 23 patients with prosthetic heart valves (6 mitral, 10 aortic and 7 microsurgical Starr Edwards or Bjork valves) treated with or without sulcottidil.

The patients were distributed in 2 comparative groups: the treated group with 11 patients with VKA (nicoumalone) and sulcottidil (600 ng/day) and the control group with 12 patients with VKA alone. The biological parameters were performed before (the 10th postop. day) and 6 weeks after treatment with or without sulcottidil.

Before treatment were: FST shortened, platelet adhesiveness and aggregation normal and PF_{4} release, factors I, VIII-C, VIIIR-Ag increased in both groups.

After treatment, FST returned to normal in the treated group, but remained unchanged or was more decreased in the control group. Platelet adhesiveness and aggregation were unchanged in both groups. PF_{4} release was reduced in the treated group and unchanged in the control group. Platelet count, factors I, VIII-C, VIIIR-Ag returned to the preoperative values in both groups. Two severe thromboembolic complications appeared in the control group, none in the treated group.


Plasmin-treated human purified factor VIII prepared from normal and a fibrinogenemia plasma inhibits the ADP-induced aggregation and the collagen-induced 14C serotonin release of normal and von Willebrand human platelet rich plasma (PRP). These results reconfirm the fact that the inhibition of the human platelet function by the effect of plasmin on the plasminotic protein is mainly linked to the digested factor VIII but not to the fibrinogen, fact that we had previously proved when ADP-induced aggregation was inhibited by plasmin-treated normal platelet serum, but not by plasmin-treated von Willebrand plasma. The factor VIII breakdown products were revealed by crossed immunoelectrophoresis, sepharose 4B chromatography and SDS polyacrylamide electrophoresis.

The defective ADP-induced aggregation that we have observed in PRP from patients between the 8th and the 24th hour of thrombolitic treatment, is only due to the proteolitic effect of plasmin on the plasminotic factor VIII and not to a direct action of the plasmin on the platelet membrane, since washed platelets from these patients aggregate normally by ADP with normal platelet poor plasma (PPP), and the collagen-induced 14C serotonin release is also correct.


The heparin thrombin clotting time (HTC) of platelet poor plasma (PPP) measures non-specifically the total heparin neutralizing activity (HNA) of PPP. This HNA must include any platelet factor 4 (PF_{4}) liberated in vivo from "activated" platelets. It is suggested that released PF_{4} is the main determinant of clinical abnormalities of the HTC for the following reasons. (1) There is an inverse relationship between the intra-platelet PF_{4} determined by a clotting method and the HTC (Thrombos. Haemost. 35,469,1976). (2) There is minimal activity in plasma from aplasia and I.T.P. (3) There is a mild excess of activity in groups of patients at risk of thrombosis and (4) most activity during thrombosis, operations, acute myocardial infarction and infections, in all of which conditions platelets presumably are involved and "activated". There is a significant inverse correlation between the HTC and (5) the plasma "low activity PF_{4} of Wiskierowski and (6) the F thromboglobulin (radioimmunoassay).

In most healthy people this test is remarkably constant, suggesting a steady state. But there are mixed inter-person differences which could indicate different degrees of platelet activation and different thrombotic risks. This test can be routinely carried out in 7 minutes in a hospital laboratory with consistent results over the years. It is already of great clinical use and importance. Since this test can now be normalized therapeutically the question of patient benefit can be raised.

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