

Title: FIBRONECTIN LEVELS AND POSITIVE HTLV III IN PATIENTS UNDERGOING VALVE REPLACEMENT.

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Introduction. Bleeding following open heart surgery is usually due to inadequate protamine reversal, reheparinization and abnormal level of coagulation factors. We have observed that patients who have positive HTLV III undergoing valve replacement have a higher incidence of postoperative bleeding than the normal population. Fibronectin is a large glycoprotein found in many biological fluids, on the surface of variety of all types, in extracellular matrices and in basement membranes. It contains binding sites for a number of factors normally found in blood plasma. This study was designed to quantitate fibronectin levels in patients with positive and negative HTLV III undergoing aortic and mitral valve replacement.

Methods. Sixteen patients scheduled for valve replacement were studied. They were divided in 2 groups, group I consisted of 8 patients with HTLV III negative (control), group II consisted of 8 patients with HTLV III positive. All the patients in group I were drug addicts. In group II 4 patients were drug addicts and 5 homosexuals. An activated clotting time (ACT) was taken before and after heparin administration and after protamine administration. PT and PTT were also calculated. The dosage of protamine was identical to the dosage of heparin.

Quantitative determination of fibronectin was performed by immunoassay using nonclonal antibodies to human fibronectin. Levels were obtained before CPB, after CPB, after administration of FFP or cryoprecipitate and 12 hours later.

The samples were collected using citrate 3.8% as anticoagulant and processed immediately. Plasma was separated from the red cells by centrifugation at 3000 rpm for 15 minutes and stored in plastic tubes at 20°C until assay.

Results. There was a statistical significant difference in fibronectin levels between the two groups. Fibronectin levels was lower in those HTLV III positive patients than in the control group before and after cardiopulmonary bypass. Fibronectin decreased significantly from 180 ± 10 to 89 ± 5 ($p < .005$) ngs/ml after cardiopulmonary bypass and increased to 254 ± 15 and 325 ± 19 soon after administration of fresh frozen plasma and 12 hours later. Those levels were almost identical 12 hours later to the control group. There was no difference in ACT and thrombin time and platelets count between those 2 groups. No patients in the control group required administration of FFP.

Conclusion. Abnormal low fibronectin levels occur after valve replacement in patients with HTLV III positive following adequate heparin reversal. That may explain the high incidence of postoperative bleeding found in those patients.

Table 1. Fibronectin levels, ACT and thrombin time in patients with HTLV III positive undergoing valve replacement.

Patients	Before	After	FFP	12 hours
ACT (secs)	I 125±10	110±9.5		110±9
	II 160±15	140±11	130±12.5	135±10
Thrombin Time (secs)	I 13±.5	16±.4		14.5±.3
	II 14±.4	15±.5	14±.4	13.5±.3
Fibronectin (ngs/ml)	I 294±20	207±2		263±25
	II 180±10	89±5	254±15	325±19
Platelets	I 175.000±150	160.000±130		
	II 160.000±190	175.000±150		

References.

1. Fibronectin: Current concepts of its structure and functions. Coll. Res. 1:95-128, 1981.