

## Action of Heparin and other Anticoagulants

Level 6 – Green Side (Westminster Buffet)  
and adjacent Terrace

Free Poster Session 11.30 – 12.45

Poster  
Board  
P6-092

- 0758** THROMBELASTOGRAPHIC EFFECTS OF DEXTRAN 70 ON HUMAN BLOOD: H. Kwaan, S. Wright, L. Zuckerman\*, J. A. Caprini and P. J. Vagher, Department of Surger, Evanston Hospital and Department of Medicine, Northwestern Univ. Med. School and V.A. Lakeside Medical Center, Chicago, Ill. U.S.A.

The effects of dextran was studied by thrombelastography (TEG) because it can graphically depict fibrin formation and dissolution and platelet-fibrin interaction during clotting. Dextran 70 in concentrations of 1-8% were added to samples of native whole blood (WB), recalcified whole blood (RWB), platelet-rich plasma (PRP) and platelet-poor plasma (PPP) using buffered saline as control. Dextran produced an 18% reduction in clot stiffness (MA) with native and celite activated WB. The same native WB showed a 23% prolongation of clotting (R) and a 24% decrease in the rate of clot formation ( $\alpha$ ), while the celite activated WB R and  $\alpha$  were reduced by 17% and 19% respectively. However, using PRP we found only a 10% reduction in MA as a result of dextran addition, suggesting that clotting and recalcification diminished the dextran effects. With PRP (platelets  $>560,000$ ) dextran did not show any significant reduction in the measured parameters, while PPP gave the greatest response with a 36% decrease in MA. Results were similar if PRP was obtained from subjects who had taken aspirin. This indicates the main action of dextran appears to be on the fibrin network rather than on platelets or the platelet-fibrin interaction, though this effect is best seen when platelet concentrations are low. Clot lysis by urokinase or streptokinase was accelerated in the presence of dextran but was reduced by increased platelet concentrations. These results suggest a direct effect of dextran on fibrin formation and may explain the antithrombotic effect of dextran in that defective fibrin formation occurs.

- P6-093 0759** EFFECT OF DEXTRAN ON THE POSTTRAUMATIC FIBRINOLYSIS INHIBITION

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Increased fibrinolysis inhibition activity (FIA) in the blood is seen in patients with postoperative thromboembolic complications and has been suggested to be of importance in the pathogenesis of these conditions. Infusion of dextran (500 ml 6%) to patients 3 days after total hip replacement surgery, when FIA was maximal, strongly decreased FIA of plasma measured by a clot lysis assay. Plasma antiplasmin (chromogenic substrate assay) and immunologically determined levels of the primary fibrinolysis inhibitor (PFI,  $\alpha_2$ -antiplasmin),  $\alpha_2$ -macroglobulin,  $\alpha_1$ -antitrypsin and plasminogen were not changed after the infusion of dextran. The effect of dextran on plasminogen activation by urokinase and fibrin degradation was studied in clotted plasma. The presence of dextran accelerated both the fibrinolysis and the uptake of labelled plasmin on fibrin. This effect of dextran was not seen in experiments where the clot was made of purified fibrinogen (containing plasminogen) instead of plasma. The FIA-decreasing effect of dextran is also dependent on the presence of physiological plasmin inhibitors and fibrin. The results indicate that the activation of plasminogen is enhanced by dextran provided that fibrin and inhibitors are present.