INFLUENCE OF ELASTASE ON BLOOD COAGULATION FACTORS: STUDIES IN VITRO, IN BASS AND IN GÖTTINGER MINIATUR PIGS.J. Kaster, U. Artmann, T. Raether, H. Burchardt, and H. Köstering, Univ. of Göttingen, Dept. of Internal Medicine and Dept. Anesthesi- sia, Göttingen, W-Germany.

The influence of blood coagulation factors in pat. with acute respiratory insufficiency of adults, e.g. called "pancreatitis lungs" is still unknown. In order to find out the effect of elastase, possibly activated by trypsin in pat. with acute pancreatitis, on blood coagulation factors, we performed some studies. In vitro elastase induces in plasma and blood to the dosages enhancement of thrombogen- generation in the TGT, a shortening of PT, Thrombin time and of r- and k-time in the TEG, a loss of fibrinogen and an increase of fibrinomonomercomplexes. In another study, elastase (960 U/ kg b.w.) was injected intravenously in rats. 30 min. later there was found a loss of fibrinogen, number of platelets, Prothrombin and a prolonga- tion of PTT and Thrombin time and an increase of fibrinomonomercomplexes, especially in these rats, which received beside elastase Kallikrein inhibit- ors or antifibrinolytic drugs. After repeated injections (5 times within 50 h) we found histo- morphologically thrombi as well as bleeding com- plications. In another study we performed (150 pigs) which received beside elastase Kalikreininhibi- tors or antifibrinolytic drugs. After repeated injections (5 times within 50 h) we found histo- morphologiically thrombi as well as bleeding comp-lications. After repeated injections (5 times within 50 h) we found histo- morphologi- cally thrombi as well as bleeding complications.

When factors determined in factor control plasmas are compared to normal plasma, actitivity of Factors IX, X and XI are of the same order. As there is evidence that intraglomerular coagulation is a significant disease may be of benefit to developing a primary or secondary event. As there is evidence that intraglomerular coagulation is a significant factor in the development and maintenance of oliguria in acute ischemic renal failure, blood coagulation investi- gations were performed in 20 patients with acute renal failure of varied etiology. The investigations were done on a daily basis from the onset of oliguria (urine flow <20 ml/h) until serum creatinine declined to less than 2.0 mg%. Thus, we were able to detect changes in blood coagulation during oliguria and polyuria. We found an enhanced thrombogen generation in both oliguria and polyuria. Fibrin monomer complexes were significantly increased in both states, but more predominantly in polyuria. Factor VIII and alpha-1 antitrypsin activities were also elevated. PTT and r- and k-time in TEG were shortened more in polyuria than in oliguria, whereas fibrinogen was elevated more in oliguria than in polyuria. Factor XIII activity and prothrombin complex activity (Quick's test) were lowered in both states, the lowest values of the former being found in polyuria, the lowest values of the latter in oliguria with a normal- izing tendency in the following days. Fibrinolytic activity was also decreased. No significant changes were found in plasminogen, antithrombin III, alpha-2 macroglobulin, factor V and thrombomodulin.

The blood coagulation system makes a significant con-tribution to renal damage in many disease processes. Intra- renal coagulation appears to occur in a variety of dis- eases as a primary or secondary event. As there is evidence that intraglomerular coagulation is a significant factor in the development and maintenance of oliguria in acute ischemic renal failure, blood coagulation investi- gations were performed in 20 patients with acute renal failure of varied etiology. The investigations were done on a daily basis from the onset of oliguria (urine flow <20 ml/h) until serum creatinine declined to less than 2.0 mg%. Thus, we were able to detect changes in blood coagulation during oliguria and polyuria. We found an enhanced thrombogen generation in both oliguria and polyuria. Fibrin monomer complexes were significantly increased in both states, but more predominantly in polyuria. Factor VIII and alpha-1 antitrypsin activities were also elevated. PTT and r- and k-time in TEG were shortened more in polyuria than in oliguria, whereas fibrinogen was elevated more in oliguria than in polyuria. Factor XIII activity and prothrombin complex activity (Quick's test) were lowered in both states, the lowest values of the former being found in polyuria, the lowest values of the latter in oliguria with a normal- izing tendency in the following days. Fibrinolytic activity was also decreased. No significant changes were found in plasminogen, antithrombin III, alpha-2 macroglobulin, factor V and thrombomodulin.

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