0939

DETERMINATION OF ANTITHROMBIN III IN EXTRAVASAL BODY FLUIDS BY RADIOIMMUNOASSAY. H. Bleyl, Institut für Klinische Chemie und Pathobiochemie der Justus-Liebig-Universität D-6300 Gießen.

Detection of trace amounts of AT III need highly sensitive methods like a radioimmunoassay. Purified human AT III was radiolabeled enzymatically with the GOD/POD method. After iodination, the 125 J-AT III was purified by affinity chromatography over heparin agarose. The antibody (rabbit immunoglobulin) was adsorbed to protein A-Sepharose and covalently linked by dimethyl suberimidate. Binding capacity of the radioiodinated AT III was > 90%. The sensitivity of the immunoassay was 20 ng/ml AT III. The intercept point (50% displacement) was at 300 ng/ml AT III.
Healthy volunteers with a renal excretion of < 50 mg/24 hours total protein had an AT III excretion of 30 - 50 ug/24 hours.
Spinal fluid within the normal range of 150 - 450 mg/l total protein contains 0.5 - 2.5 mg/l AT III.
Patients undergoing continous ambulant peritoneal dialysis (CAPD) lost 2.5 - 12 g protein with up to 4 x 1.5 - 2 l dialysate. The loss of AT III was 20 - 100 ng/24 hours.

0940

KINETICS OF ANTITHROMBIN III DURING SEVERE CONSUMPTION COAGULOPATHY IN AN INFANT MEASURED WITHOUT RADIOACTIVE TRACER PROTEINS. B. Schmidt, U. Wais, I. Witt, W. Pringsheim and W. Künzer. Department of Paediatrics, University of Freiburg, Freiburg, FRG.

The precise diagnosis of disseminated intravascular coagulation remains difficult to achieve: Decreased production of coagulation factors and/or thrombocytes can mimic the laboratory pattern of disseminated intravascular coagulation. The measurement of increased turnover rates for coagulation proteins would provide more convincing criteria.

During the course of severe coagulopathy in an infant suffering from septicaemia and shock, antithrombin levels were determined repeatedly before and during treatment with Antithrombin concentrate: Activities and concentrations were measured, using chromogenic substrates and immunodiffusion plates, respectively. By mathematical analysis of these data, using a biexponential function, the plasma elimination half-life of the antithrombin III was estimated to be 7.5 to 10.5 hours. Compared with known plasma half-lives of radioactively labelled antithrombin III in adults, the increase was five- to ten-fold. This indicates an accelerated consumption of antithrombin III in this case of severe coagulopathy.

0941

INTRA-OPERATIVE ANTITHROMBIN III, PLASMINOGEN AND α_2 ANTIPLASMIN BEHAVIOUR. H.R Büller, Ch.P. Henny, M. Ritzen, L.H. Kahlé, J.W. ten Cate. University Hospital "Wilhelminagasthuis", Amsterdam, The Netherlands.

Previously we reported that major surgery induces a marked but transient decline (30%) of antithrombin III (AT III) and plasminogen (PLG) in the first post-operative days. α_2Antiplasmin (α_2AP) alone decreases on the day of operation. In the study presented we focused on the intra-operative behaviour of AT III, PLG and α_2AP in order to establish whether the decrease is gradual or that even lower values are reached during surgery, in different groups of patients. AT III was studied as a marker of activation of the coagulation system and PLG and α_2AP as indicators of fibrinolytic activity. Blood samples were taken pre-operatively, every thirty minutes intra-operatively, and within one hour after surgery. The results were as follows:

mean decrease	major vasc. surgery (n=8)	major abd. surgery (n=8)	orthop. surgery (n=8)	opht. surgery (n=8)
AT III	47% (42-62)*	42% (32-53)	13% (8-21)	9% (5-16)
PLG	48% (20-72)	38% (30-46)	22% (16-28)	14% (7-17)
α_2AP	58% (25-66)	31% (19-44)	20% (7-31)	14% (7-29)

* range in parentheses

The observations were related to hematocrit, blood loss, transfusion and duration of surgery. It is concluded that major surgery is associated with a profound decline of AT III, PLG and α_2AP, which may play an important role in the development of intra operative thrombosis.

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.