rich plasma (RPRP), and a negative correlation between 20 : 4 and RPRP. There was also a correlation between the ratio 18 : 0/20 : 4 and RPRP and a negative correlation between 18 : 0/20 : 4 and platelet factor 3 activity in plasma.

In group 2 there was a significant decrease in 18 : 0 and an increase in 20 : 4 in the serin cephalin fraction from platelets after the diet period compared to preexperimental values. Russel's viper venom clotting time (RVV) decreased significantly in group 1. There was a significant correlation between the decrease in RVV and the increase in plasma alpha-tocopherol.

L. E. McCoy, D. T. H. Liu and V. Y. Wu (Wayne State University, School of Medicine, 540 E. Canfield, Detroit, Michigan, 48201, U.S.A.): **Thromboplastin and Platelet Factor 3: Protein and Phospholipid Components Required for Procoagulant Activity. (380)**

Characteristics of bovine brain and lung thromboplastins and platelet factor 3 are compared, emphasizing protein and phospholipid moieties involved in procoagulant activity. Isolated tissue and platelet procoagulant lipoproteins were separated into lipid and protein fractions by repeated ethanolic extraction. Lipid composition and quantitation was ascertained by thin layer chromatography. The protein-free lipid mixture functioned as a partial thromboplastin. Protein fractions were purified by deoxycholate solubilization, gel filtration, and chromatography on diethylaminoethyl cellulose. Comparative biochemical properties were determined by gel filtration, polyacrylamide gel electrophoresis, sedimentation velocity and by carbohydrate and amino acid composition. Purified protein components were devoid of enzymatic activity. They were also free of procoagulant activity on prothrombin or autoprothrombin III (Factor X) unless they were combined with one or more phosphatides of ethanolamine (PE), choline (PC), serine (PS), or inositol (PI). The proteins of thromboplastin appear to have homologous biochemical characteristics and phospholipid requirements for expression of procoagulant activity, while differences in platelet factor 3 activity relate to differences in both protein and phospholipid requirements.

(Supported by USPHS, NIH Grant HL 14142).

L.-O. Andersson and H. Sandberg (AB KABI, Stockholm, Sweden): **Thromboplastic Effects of Human Plasma Lipoproteins. (381)**

Lipoprotein fractions from human plasma was prepared by ultracentrifugal flotation. Additions of those fractions to plasma containing various amounts of platelets showed that in platelet-poor and platelet-free plasma there was a clear clot-promoting effect of the additions. In platelet-rich plasma this effect was negligible. Measurements on the thromboplastine and Stypven clotting times showed that the high density lipoprotein fraction affected both the prothrombin and the Factor X activation steps whereas the low density lipoproteins only influenced the prothrombin activation step. Addition of antibodies against high density lipoproteins to platelet-free plasma caused a prolongation of the thromboplastin time.

The relation between lipoprotein structure, phospholipid content and thromboplastic effects is dicussed.

T. W. Barrowcliffe, J. M. C. Gutteridge, J. Stocks and T. L. Dormandy (Whittington Hospital, London N19. National Institute for Biological Standards and Control, London NW3): **Effect of Lipid Oxidation Products on Blood Coagulation. (382)**

Pure fatty acids in buffered aqueous suspension were allowed to autoxidise for up to 4 days. At intervals, lipid-free extracts were tested for effect on coagulation. 1-day extracts accelerated recalcification and RVV times, but products after 2–4 days oxidation showed progressive inhibition in these tests, and prolonged the P. T. and P. T. T. Addition of extracts to phospholipid altered its activity, and preparations of phospholipid extracted with an without antioxidant had different activity. In the absence of phospholipid,

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