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37. Changes in Human Serum Lipids and Lipoproteins Accompanying Changes in Thyroid Function

Hyman Engelberg, Los Angeles, Hardin B. Jones and John Gofman, Berkeley, Calif.

Cedars of Lebanon Hospital and Division of Medical Physics, University of California

Previous studies have shown that the blood lipids are frequently altered in hypothyroidism and hyperthyroidism. Quantitative determination of the lipoprotein components of serum by the recently developed ultracentrifuge method of Gofman and his co-workers is important whenever blood lipids are affected. Accordingly the blood cholesterol and esters, phospholipids, neutral fat, total lipids, cholesterol: phospholipid ratio, and the ultracentrifugal analysis of lipoproteins were obtained in thyroid patients. The ultracentrifugal determinations were performed at the Division of Medical Physics of University of California.

Three groups of patients were studied throughout their full therapeutic course. The first consisted of patients with hyperthyroidism who were treated with radioiodine. The second was a group of severely ill cardiac patients to whom radiodine was being given to produce marked hypothyrodism. The third was comprised of hypothyroid patients who were given thyroid therapy. The lipid and lipoprotein changes throughout the course of therapy will be presented together with the basal metabolism, blood iodine and radioiodine uptake determinations. The relationship between the ultracentrifugal lipoprotein determinations and the blood lipids chemically determined will be analyzed. The importance of correcting hypothyroidism and the danger inherent in overly depressing thyroid function will be discussed in relation to atherosclerosis.

38. Serum Lipid and Protein Fractions. IV. Primary Essential Xanthomatosis

Irving Leinwand, New York, N. Y.

Bellevue Medical Center, Post Graduate Medical School, New York University

Simultaneous studies of the electrophoretic pattern of the serum protein and lipid fractions were made on 10 patients with this disease. Half of these patients were studied from 4 to 21 months with repeated determinations. The beta globulin was elevated in all patients in this series. This elevation was constant with only slight relative variations. The mean decrease in this component after ether extraction was almost 60 per cent. The mean decrease in the total pattern area for the entire series was 28 per cent. This compares favorably with the works of Aarons and Kunkel in primary biliary cirrhosis where there was a decrease of 33 per cent. The increase in cholesterol and/or lipids was apparently not associated with a proportional increase in proteins. Data, graphs, and electrophoretic patterns are presented to illustrate these phenomena.

39. Water Insoluble 1,2-Glycols in Diabetic and Nondiabetic Human Aortas

Lyle G. Graham, Jr. and J. B. McManus, Charlottesville, Va.

Department of Pathology, University of Virginia School of Medicine

Random Helly's fixed sections of aortas from 22 autopsied cases of diabetes mellitus were colored with the periodic acid-Schiff reagent method for 1,2-glycol and the Hotchkiss and Oleson combination of the Hale method for acid polysaccharides followed by the periodic acid-Schiff reagent method. These were compared with similar sections from 29 nondiabetics selected to correspond in age, sex, race and presence or absence of hypertension.

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