Vascular Lesions in the Patients with Essential Familial Hyperlipidemias

HIROSHI SEKIMOTO AND TSUGUHIKO NAKAI

WE HAVE studied and traced follow-up to ten years about forty patients with essential familial hyperlipidemia in ten families. The present study was conducted in order to determine the distribution of these families in Hoku-riku district, type of hyperlipoproteinemias, vascular complications and effects of treatment.

Most of these families lived in Toyama and Ishikawa prefecture, especially in Noto-peninsula. We could not find the characteristics in the diets of these families. Forty-five per cent of these patients was type IIa, 15 per cent type IIb, 25 per cent type III and 15 per cent type IV, according to the Fredrickson typing system.

Of the patients with type II hyperlipoproteinemia 40 per cent developed ischemic heart disease and of those with type III 80 per cent. The incidence of ischemic heart disease in the patients with type IV hyperlipoproteinemia was as high as type II. Four patients with type IIa hyperlipoproteinemia died from anterior myocardial infarction. There was a family with type IIa hyperlipoproteinemia, none of whom had vascular complications, especially coronary heart disease in spite of the fact that the serum lipid levels of these patients were very high for a long time and we could not find the effective treatment.

Most of patients with type III and IV hyperlipoproteinemia had the abnormal glucose tolerance tests.

We treated the patients by diet regulations and pharmacological agents such as C.P.I.B., anabolic steroids, bile sequestrant and etc. In most of the patients with type III or IV hyperlipoproteinemia these treatment resulted in a complete normalization in serum lipid concentrations but it was very difficult to lower the serum lipid levels in the patients with type II hyperlipoproteinemia to the normal range.

The ischemic changes in ECG were improved in 50 per cent of the patients with type III or IV hyperlipoproteinemia whose lipid levels were reduced to the normal range by treatment. The abnormal glucose tolerance tests found in the patients with type III or IV hyperlipoproteinemia were also improved by treatment mentioned above.

By treatment the changes of serum phospholipids levels paralleled those of serum cholesterol in most of the patients with type II hyperlipoproteinemia but in some patients there was no relationship between these two serum lipid levels throughout the study period. So we suggest that we had better take into consideration these findings in classifying the hyperlipoproteinemias.

The serum lipoproteins were analysed not only by the paper electrophoresis but also by column chromatography. We found the very interesting findings in the lipoprotein pattern by column chromatographic analysis.

Key Words: Familial Hyperlipidemia
Hyperlipoproteinemia

Department of Gerontology, Kanazawa Medical University, Kanazawa

* This paper was presented at the Symposium 'Hereditary and Environmental Factors of Circulatory Diseases' on the 36th Annual Meeting of the Japanese Circulation Society in Kanazawa, April 11, 1972.