[Review]

Epidemiological consideration on the difference in frequency of apoplexy and coronary heart disease in Japan compared with European countries.

Hiroshi OKADA*

It is well known that in Japan the mortality rate from cerebrovascular disease has been very high, though that from cardiovascular disease has been fairly low. Today this tendency has not changed. However, there is seen a little decrease in cerebrovascular death and a little increase in cardiovascular death.

I should like to present the current features of these two diseases in Japan, and comparing them with those in European countries, to consider the cause from an epidemiological point of view.^{1),2),3)}

Since 1947, the first cause of death in Japan has been cerebrovascular disease and the third, cardiovascular disease, contrary to European countries.

Figure 1 shows the age-adjusted death rate from cerebrovascular disease in Japan compared with 10 other countries.^{4),5),6)} The rate in Japan is the highest for both males and females in 1971.

By contrast, Figure 2 shows the age-adjusted death rate from cardiovascular disease in 12 countries.^{4),7)} Japan is the lowest both for males and females.

Figure 3 shows the mortality trend of cerebro- and cardiovascular diseases in Japan since the beginning of 20th century.⁴⁾ Recently cerebrovascular disease

has shown a little decrease, but reversely cardiovascular disease a little increase.

The characteristic feature of cerebrovascular disease in Japan lies in the higher incidence of cerebral hemorrhage than in European countries. Figure 4 shows the ratio of cerebral hemorrhage to cerebral thrombosis by population surveys in Japan, U.S.A. and Australia.⁸⁻¹³⁾ In Japan this ratio is much higher than in other countries. This feature is also seen in autopsy data of Japan and European countries.

As the causes of this high mortality from cerebrovascular disease in Japan. The way of living, structure of houses, diet, etc., could be considered.

I should like to mention especially the structure of housing and high salt intake to a monotonous rice diet.

Figure 5 indicates a regional difference of age-adjusted death rate from cerebrovascular disease.¹⁴⁾ It shows a higher mortality in the northern part, except for Hokkaido, the northern most island.

In Japan even today many homes are tropical style in structure, with the room temperature almost the same as that outdoor, so that the residents are exposed to the cold in winter. However, in Hokkaido

* 愛知医科大学公衆衛生学教室

* *Department of Public Health, Aichi Medical University*

the houses are northern in type and have been equipped with heating, ever since the island was settled at the end of the 19th century.

Figure 6 shows the relationship of salt intake with cerebral stroke.¹⁵⁾ You will see a high correlation between the two. The high consumption of salt is an inevitable results of a monotonous diet consisting of a high percentage of rice. Such relation exists also between hypertension and salt intake.

Figure 7 shows the regional difference of age-adjusted death rate from cardiovascular disease.¹⁴⁾ No significant regional difference is seen when compared with that of cerebrovascular disease.

Figure 8 shows that cardiovascular death has been increasing, especially in metropolitan cities than in other cities and rural districts.⁴⁾

Figure 9 shows that trend of the diet in recent years in Japan.¹⁶⁾ The total calories intake has increased most in rural districts due to a higher intake of carbohydrates. In contrast, the intake of fats is greatest in metropolitan cities due to the diet becoming more western in style.

Figure 10 shows the average serum cholesterol level of the Japanese for all ages.¹⁷⁾ You will see the level is highest in metropolitan areas, though it is still fairly low when compared with that of European countries.

In concluding, I would like to stress that what will be the most important problem in Japan, is to decrease the incidence of cerebrovascular disease and also to prevent an increase in cardiovascular disease.

Figure 1. Age-Adjusted Death Rate from Cardiovascular Disease in 12 Countries, 1970-1971

Source : Vital Statistics of Japan.
World Health Statistics Annual 1971 Vol.1.
Vital Statistics of the United States
1970 Vol. 11.

Figure 2. Age-Adjusted Death Rate from Cardiovascular Disease in 12 Countries, 1970-1971

Source : Vital Statistics of Japan.
World Health Statistics Annual, 1972.

Figure 4. Relative Frequencies of Cerebral Hemorrhage and Thrombosis in Japan and Other Countries

Okada, H., 6th Annual Report of the Jap. Assoc. CCDC, 1971

Figure 5. Cerebrovascular Disease 1970

Sources :Ministry of Welfare,. Age Adjusted Death Rate in Japan, 1970

Figure 6. Relation of Cerebral Stroke with NaCl Intake (Males, 40—69 in Age)

Komachi, Y., et al. Annual Report of the Center for Adult Diseases, 1975. Osaka

Figure 7. Heart Disease

Sources : Ministry of Welfare, Age Adjusted Death in Japan, 1970

Figure 8. Age-Adjusted Death Rate from Cardiovascular Disease in Japan

Sources : Viral Statistics of Japan, 1974

Figure 9. Trend of Nutrient

"Present Status of Food Consumption in Japan"
Ministry of Welfare, Japan, 1976

Figure 10. Total Serum Cholesterol Level in Japanese Men

Research Committee on Arteriosclerosis in Japan :
Jap. Circul. J., Vol. 29, 1965
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