

CARDIOVASCULAR DISEASES IN JAPAN *

Masao Ikeda
National Cardiovascular Center, Osaka, Japan

I. Outline of Circulatory Organ Diseases

For quite a few years following the Second World War, the number one cause of unnatural death in Japan was tuberculosis (TB). TB actually had the status of "the national disease" of Japan during those years. However, as a result of carrying out mass testing of the population so that the disease could be detected in its early stages, and the progress that was made in terms of chemotherapy, the incidence of TB was greatly reduced. Accordingly, in 1960, TB was clearly replaced by cerebral apoplexy as the number one killer disease of Japanese. Heart disease was the number three cause of death at that time.

According to statistics of the Ministry of Health and Welfare for 1980, diseases of the circulatory organs accounted for 41% of the unnatural deaths (Fig. 1). This figure was arrived at on the basis of death certificates issued by physicians, so there is some limit to its accuracy.

The highest percentages of patients who received treatment occurred in the hypertension patients, followed in order by patients suffering from psychological disorders, cerebrovascular disorders, heart disease, liver diseases, diabetes mellitus, TB, malignant tumors, etc. This order is based on the numbers of patients who received treatment. If we also consider jointly those patients who were latent cases of circulatory organ diseases, it can be surmised that the numbers must be extremely large.

In today's Japan, circulatory organ diseases must certainly be considered to be a national disease, and how to achieve control over this group of diseases is an important problem facing the nation.

II. Cerebrovascular Disorders

Over a period of 20 years, the number one cause of death in Japan was cerebral apoplexy. Since 1978, there have been signs that the incidence of death due to cerebral apoplexy is decreasing somewhat. As of 1980, cerebral apoplexy had been replaced by cancer as the one killer in some areas of Japan.

This recent trend toward a decrease in the incidence of deaths occurring due to cerebral apoplexy may be a result of the spread of the effective use of antihypertensive drugs as therapy for hypertension. In addition, there is a connection with the improved diet of the Japanese people, that is, the intake of salt is being reduced, while the intake of proteins is increasing.

Moreover, cerebral apoplexy in Japan has some characteristics which distinguish it from the disease in Europe and the United States. That is, in the West the incidence of cerebral infarction is overwhelmingly high. In Japan the ratio of the incidences of cerebral hemorrhage and cerebral infarction is higher than their ratio in the West. However, in recent years, in Japan also there has been a decrease in the incidence of cerebral hemorrhage, and an increase in the incidence of cerebral infarction; the pattern in Japan is becoming more and more similar to that seen in the West.

* Reprinted from the book "Present Status of Cardiovascular Hemorheology in Japan." See editorial this issue on page 218.

At the National Cardiovascular Center, in the last 2 years, 300 hospitalized patients were confirmed by computerized tomography to be in an acute stage of cerebral apoplexy. The ratio of incidence of cerebral hemorrhage to cerebral infarction in these patients was gain 1:2. These results indicate that the incidence of cerebral hemorrhage remains considerably higher at present than would have been expected.

III. Heart Diseases

Congenital heart disease is seen in 0.7% of newborn infants in Japan. There is no variation in this figure over the years. Rheumatic heart disease has been showing a gradual decline in incidence. However, even though there has been a decrease in the incidence of this disease in the field of internal medicine in the younger fellow, the absolute number of such cases is still quite large especially in the elderly person. Rheumatic heart disease currently accounts for a majority of the cases of heart surgery.

Cardiomyopathy is at present one of the diseases receiving attention, and research is being vigorously carried out on the causes of this disease as well as on diagnostic methods.

Ischemic heart disease is not as common in Japan as in the West. Nevertheless, this type of heart disease is the most important of the various forms of heart disease in Japan. It is easy to anticipate that Japan will quickly become an aged society in the years ahead, and it seems likely that ischemic heart disease will continue to become more and more important.

Studies on hospitalized patients have revealed that the incidence of myocardial infarction is higher in males than in females. This disease occurs most frequently in patients who are in their 60s and 70s, although it is also seen in patients in their 50s. However, the incidence of myocardial infarction in Japanese below 50 years of age is much smaller than the incidence recorded in Europe and the US. The main reason is that the Japanese diet is far superior to the diets of Westerners in terms of the prevention of arteriosclerosis and the prevention of the formation of thrombi.

Hyperlipemia and obesity are thought to be risk factors in the case of coronary artery disease. The incidence and severity of both of these symptoms are lower in Japan than in the West. In the Framingham study, hypertension was considered to be an important risk factor in the development of ischemic heart disease. However, in Japan, where the incidence and severity of hyperlipemia are low, hypertension is not considered to be a key factor in the causation of myocardial infarction.

IV. Diseases of the Peripheral Blood Vessels

Today we are able to make a clinical diagnosis of pulmonary infarction. However, compared with the West, the number of such clinical cases and opportunities to perform autopsy are extremely small in Japan. Patients having pulmonary infarction are still rare in Japan.

On the other hand, there is a fairly high incidence of embolism arising from heart diseases such as atrial fibrillation and heart valve disease. Approximately 25% of cerebral apoplexy attacks are caused by embolisms. It is also not rare to find embolisms occurring in the kidneys, abdominal blood vessels, and the extremities.

Intractable aortic diseases and occlusive diseases of the arteries of the extremities are increasing in incidence in recent years, these diseases may require greater attention in the future.

Research is currently being carried out on the disease conditions and therapeutic measures for these diseases under the auspices of the Ministry of Health and Welfare.

V. Hypertension

Among the diseases of the circulatory organs, hypertension is the disease having the highest incidence. The incidence of hypertension increases with increasing age. It is estimated that the incidence of hypertension within the whole Japanese population is about 20%, and this incidence is about the same as in the United States.

The highest incidence of hypertension in Japan is recorded in the northern areas of Honshu, the Tohoku Region. The high incidence of hypertension in these region is attributed to the residents' love of salty foods. Moreover, those same areas also show a high death rate due to cerebral apoplexy.

The epidemiological relationship between salt intake and hypertension is being reinvestigated. Moreover, clinical and basic research is currently being carried out on the relationship between the role of sodium and potassium with regard to the development and progress of hypertension.

The spontaneously hypertensive rat (SHR) is the animal hypertension model that is the most similar to essential hypertension in man. The model has contributed greatly to the clarification of the environmental factors involved in causing and promoting the vessel damage that is associated with hypertension. Since research employing SHR and stroke-prone SHR is being pursued very aggressively, we can look forward to obtaining some interesting results in the coming years.

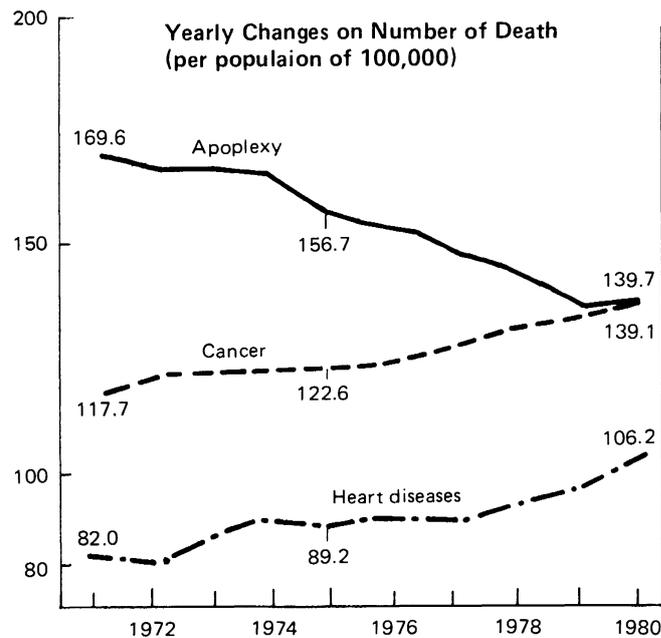


Fig. 1