

Editorial

Ischemic Stroke in Japan: Trends and Therapeutic Limitations

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EDITORIAL

Stroke is now the fourth-ranked cause of death in Japan, with cancer, heart disease, and pneumonia in the first, second, and third place, respectively [1]. Traditionally, the proportion of intraparenchymal hemorrhage is higher for Japanese than for Western populations: 20–30% versus 5–10% [2]. Along with a major decline in mean systolic blood pressure for the population as a whole, stroke mortality declined by one-fourth to one-third for Japanese between 1970 and 2005, whereas a corresponding phenomenon was not so evident in the United States and England during this period [1]. In a similar way, the incidence of ischemic stroke declined markedly between the 1960s and 1970s as a result of hypertension control, but this declining trend slowed in the late 1980s and 1990s, probably because of an increase in metabolic disorders due to the westernization of the Japanese life style [3]. However, the pattern of ischemic stroke subtypes in Japan differed from that of Western populations, showing a high proportion of lacunar infarction, a feature that has persisted to the present time (43% for men and 52% for women) [4]. This high proportion of lacunar infarction has stimulated the development of original Japanese medical treatments for the disorder. In Japan, ozagrel sodium, a thromboxane A₂ synthetase inhibitor, was used intravenously as a specific antiplatelet agent in lacunar infarction in the acute phase. Cilostazol, a phosphodiesterase 3A inhibitor, was developed in Japan for use as an antiplatelet agent to prevent recurrences [5,6]. More recently, the incidence of lacunar infarction has decreased, despite there having been no change in the incidences of atherothrombotic infarction and cardioembolic infarction. As a result, the proportions of ischemic stroke subtypes in Japan have become more similar to that of Western populations, especially in men [4]. In future, Japan's aging population is expected to see a greater incidence of cardioembolic infarction.

In the treatment of ischemic stroke, limitations exist in Japan. The limitations are lags in innovation of needed drugs and devices—an anomaly in a developed country. The Japanese government makes slow progress in approving new drugs and devices for treatment of ischemic stroke. Recombinant tissue plasminogen activator was finally authorized in 2005,

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and devices for carotid artery stenting only in 2008. Only two devices for intracranial mechanical thrombectomy (the Merci retrieval system, Concentric Medical Inc., Mountain View, CA, USA, and the Penumbra System, Penumbra Inc., Alameda, CA) have been approved up to the present. Furthermore, none of the glycoprotein IIb/IIIa inhibitors and none of the stenting systems for intracranial arterial stenosis have yet been approved. In treating ischemic stroke, we are forced to use limited, “old fashioned” medicines and devices. However, we do our best to treat patients with ischemic stroke under these limited conditions. In this special issue, several skilled neurologists and neurosurgeons report on the state of Japanese ischemic stroke treatment.

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