Kawasaki disease in China was described for the first time in 1976 in Taiwan, and in 1978 in mainland, respectively. Questionnaire surveys had been conducted in both of the area of China and showed that the Kawasaki disease patients increased year by year. No data on incidence rates were available for these surveys because the problem of representativeness. However, it showed that there were many similar characteristics of Kawasaki disease in China comparing with those in Japan. Although a series of infectious agents were suspected, the etiology of Kawasaki disease remained unclear. High dose of gamma globulin treatment was also adopted commonly in China. 

Kawasaki disease, China, Epidemiology, Cardiac sequelae, gamma globulin treatment

Kawasaki disease (KD) is a disease of unknown etiology affecting most frequently infants and young children under 5 years of age. It was first described in 1967 by Kawasaki in Japan. Fifteen nationwide epidemiological surveys have been conducted in alternate years since 1970. A total of 140,837 patients (81,783 males, 59,054 females; male/female ratio = 1.38) were reported and three outbreaks have occurred in 1979, 1982, and 1986 respectively with the highest incidence of 172-194 per 100,000 children younger than 5 years of age. In the United States, the result of nationwide epidemiological survey showed that hospitalized patients have been accounted to 13,315 cases during the period from 1984 through 1990, and the average number per year was 1902 cases. A series of etiological hypothesis emerged but none of them have been identified as etiology of KD. KD has been reported in children of most racial and ethnic groups throughout the world and is now the leading cause of acquired heart disease in children in the United States and in Japan. There were other different features between Japanese and Chinese observed in spite of general similarities in some aspects. We will overview the profiles of KD in Mainland China, Hong Kong, and Taiwan. This review highlights the insights that have been gained and the challenges that remain in the study of this disease in China.

EMERGENCE KAWASAKI DISEASE IN CHINA AND ITS CLINICAL FEATURES

Kawasaki disease has been reported for the first time in Taiwan in 1976 and in Shanghai of Mainland China in 1978. Hu YJ reported 11 cases hospitalized in large cities in 1979 with typical clinical manifestation of KD. Fifty-eight cases (36 males and 22 females, 71% were under 3 years of age) during the period from March 1975 through February 1985 admitted in Beijing Children's Hospital had been observed on the aspects of cardiovascular lesion and treatment. They found 45% of cases with cardiovascular lesion by using 2D-echocardiography, X-ray and electrocardiography.

Forty-six typical cases were reported in Taiwan from 1976 through 1983. A total of 187 atypical cases from 1983 through 1992 were also discussed for unusual manifestation such as transient thrombocytopenia and isolated azotemia. They also found that there was no difference in clinical manifestations among the patients younger than 6 months compared with the patients older than 6 months of age. However, the
the most harmful prognosis related with KD patients. Researchers in Taiwan found IgG-CIC, PGE2, IL-6, IL-8, tumor necrotic factor (TNF), Interleukin-2 (IL-2), interferon-gamma (IFN-r) could be used as predictors of coronary arterial lesions. The combination of 2 parameters WBC count and C-reaction protein was suggested to be applied as early identifying indicator of KD patients.

TREATMENT

Aspirin and gamma globulin were the two predominant drugs for treatment of KD patients, especially when they developed coronary arterial lesions. Liang reported 58 patients were successfully treated with aspirin, steroid hormone and the combination of anti-biotic with traditional herb drug in mainland. In Taiwan, patients who received aspirin without administration of gamma globulin tended to be susceptible with coronary arterial lesions.

Hwang reported 106 cases that were treated in 4 regimens. Regimen I was the combination of aspirin with 130-200mg/kg body weight of intravenous gamma globulin, regimen II was the combination of aspirin with 201-400mg/kg of intravenous gamma globulin, regimen III was aspirin alone and regimen IV was no treatment. The result showed that even with delay in the time of start of prophylactic gamma globulin therapy, it still reduced the formation of giant coronary aneurysm. In Japan, 400mg/kg/day of gammaglobulin for 5 days is the commonest, but nowadays 2000mg/kg for one day becomes prevalent as well as in the United States.

Wu and Hwang also reported 293 cases that were treated in 3 different regimens. Regimen I was aspirin alone, regimen II was the combination of aspirin with moderate intravenous gamma globulin (400mg/kg for 5 days), regimen III was the combination of aspirin with high single dose of gamma globulin (2000mg/kg). The result showed that gamma globulin initiated within 10 days of the onset of fever, in conjunction with aspirin decreased the prevalence of coronary artery dilatation and aneurysms significantly in comparison with treatment by aspirin alone. However, there was no difference in the prevalence of coronary aneurysm between the group of single high dose and multiple doses of gamma globulin, though the single high dose of gamma globulin can improve the clinical symptoms quickly and shorten the duration of hospitalization.

Clinical trial was carried out on the patients without coronary abnormalities within 10 days of the onset. Out of 291 patients, 128 cases were treated with gamma globulin (400mg/kg for 4 consecutive days) with the combination of aspirin, and 163 were treated with aspirin alone. It showed that gamma globulin was effective in reducing the prevalence of coronary artery abnormalities. Yang also identified successful treatment by reducing the prevalence of coronary arterial lesion with high-dose intravenous gamma globulin treatment. He carried out a prospective 2DE study on coronary arterial lesions in 109 KD patients during the period from August 1983 to March 1990.

However, some studies related to gamma globulin treatment showed no evidence on significant differences in the parameters of left ventricular function, the improvement of already existed carditis and dilated coronary arteries before and after treatment.

FUTURE CONSIDERATION

We strongly suggest that fruitful avenues for future researches in China include the following: 1) epidemiological investigations of the national or provincial incidence rate of the disease; 2) intensive and comprehensive clinical retrospective study; 3) follow-up of patients into their adolescent, and adulthood if possible; 4) expanded studies of the treatment; 5) increase national and international collaboration as well as the training of qualified doctors.

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