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### KAWASAKI SYNDROME IN GEORGIA, USA, 1997-1998: EVALUATING THE USEFULNESS OF HOSPITAL DISCHARGE DATA FOR SURVEILLANCE

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**Objectives.** To evaluate the usefulness of hospital discharge data for surveillance for Kawasaki syndrome (KS), and describe the incidence of KS in Georgia. **Design.** Georgia KS hospital discharge data were analyzed for 1997 and 1998. Available Georgia KS hospital medical records were reviewed to classify patients by using the CDC case definition for KS, and to describe the KS incidence in Georgia. **Results.** During 1997 through 1998, 233 KS hospital discharges were recorded in Georgia; 177 were among children < 5 years of age, for a KS hospitalization rate of 15.7 per 100,000. However, 21 (9%) of the 233 hospital discharges represented multiple hospitalizations. For those 189 patients whose medical records were reviewed and had sufficient information to classify, 139 (74%) met the CDC criteria for KS (135) or atypical KS (4). Eight of the 50 patients not meeting KS criteria had only a remote history of KS. For 31 (74%) of the remaining 42 patients, only one criterion was missing (24) or its presence or absence was unknown (7). Fifteen (12%) of the 122 patients meeting full criteria for KS and with echocardiograms available to review had evidence of coronary artery abnormalities (CAA). The incidence for children < 5 years of age meeting the case definition for KS or atypical KS (n=110) was 9.8 per 100,000 children. **Conclusions.** Hospital discharge data are useful for KS surveillance. However, multiple hospitalizations for KS, and past history of KS may lead to an overestimation of the true KS incidence solely on the basis of hospital discharge data. The incidence and epidemiology of KS in Georgia are consistent with findings from other studies.

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### EPIDEMIOLOGIC SURVEY ON KAWASAKI DISEASE IN SOUTH CHINA, 1995-1999

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**Objective:** The objective of this paper is to describe the epidemiological and clinical characteristics of Kawasaki disease (KD) in Guangdong Province, China during 5 year-period from January 1995 to December 1999. **Methods:** A province-wide epidemiological survey on Kawasaki disease was made by the Sino-Japan Kawasaki Disease Study Group. The questionnaire form and the diagnostic criteria of KD were sent to the departments of pediatrics of all the hospitals of county level. All the patients diagnosed in 1995 to 1999 were required to be reported. **Results:** A total of 111(71.2%) hospitals responded and 537 cases of KD were confirmed. The incidence rate was 5.93 per 100,000 children < 5 Yrs. old in Guangdong province. Of total patients reported, 51.8% were younger than 2 years old and 75.6% were younger than 4 years old with male to female ratio of 2.23:1. The number of patients was higher during April to June every year and lower during October to December. Areas of the highest incidence rate were found in Shenzhen and Zhuhai and next were Guangzhou and pearl river delta, the incidence rate in the North Guangdong was the lowest. The proportion of patients with cardiac sequelae was 75 cases (14%). There were 1 fatal case with a fatality rate of 0.2%. **Conclusions:** The incidence rate of KD in Guangdong was higher than that in Jiangsu and Shanxi and obviously lower than that in Japan. As similar to Japan, Jiangsu and Shanxi in epidemiologic patterns and distribution feature. Areas of the highest incidence rate were found in good economic status and the incidence rate in difficult economic status was lower.

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### EPIDEMIOLOGIC PICTURES OF KAWASAKI DISEASE IN BEIJING FROM 1995 TO 1999

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**Objective.** Kawasaki disease (KD) is supposed to be more susceptible in Asian race. This study sought to evaluate the epidemiologic pictures of KD in Beijing and suburb area. **Method.** A questionnaire form and diagnostic guidelines for KD were sent to all hospitals with pediatric in-patient beds in Beijing and suburb areas. Pediatricians were asked to review medical records and report all patients with KD diagnosed during the 5-year period from January 1995 to December 1999. **Results.** A total of 710 patients with KD were reported from 37 (95%) of 39 hospitals with pediatric in-patient beds, with a mean annual incidence of 24.4 per 100,000 children under 5 years of age. The incidence was 18.2, 21.1, 21.2, 30.6 and 35.5 per 100,000 children under 5 years old in 1995, 1996, 1997, 1998 and 1999, respectively. The male to female ratio was 1.7:1. The age at onset ranged from 1 month to 13.4 years, with 85.2% under 5 years and peak age at 1 year old. The disease occurred more frequently in spring and summer. Lymph node enlargement was the least common sign, and its incidence decreased from 1995 to 1999. Cardiac sequelae was found in 21.5% patients, and was more prevalent in patients diagnosed 10 days after onset. No patients died in the acute stage. **Conclusion.** The incidence of KD in Beijing is lower than Japan, but higher than other western countries. The age and gender distribution, and increasing trend in incidence are similar to previous reports, but seasonal distribution is unique.

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### PREVALENCE OF CARDIAC SEQUELAE DUE TO KAWASAKI DISEASE DURING THE ACUTE PHASE, 1 MONTH AND 1 YEAR AFTER ONSET

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**Objective:** To measure the prevalence and observe the epidemiological picture of cardiac sequelae during the acute phase, 1 month after, and 1 year after the onset of Kawasaki disease. **Methods:** In 1998, 2013 patients who initially visited one of the 93 hospitals for Kawasaki disease were observed. Selection of the target hospitals was based on the nationwide survey. The patients were followed up and information concerning cardiac sequelae occurring within 1 year of onset was obtained by mail survey. **Results:** Of those 1966 patients visiting the 93 hospitals, 1620 patients could get 1 year after information. We excluded 1 fatal case. Twenty-five patients experienced recurrence within 1 year and we also excluded them from the analyses. Prevalence of cardiac sequelae during acute phase, 1 month and 1 year after onset are listed according to sex and age in table 1.

**Table 1. Prevalence of cardiac sequelae during acute phase, 1 month and 1 year after onset according to baseline background**

	No. of patients (%)	Patients with cardiac sequelae during acute phase (%)	Patients with cardiac sequelae after 1 month (%)	Patients with cardiac sequelae after 1 year (%)
Total	1594 (100.00)	267 (16.8)	105 (6.6)	51 (3.2)
Sex				
Males	893 (100.00)	164 (18.4)	63 (7.1)	35 (3.9)
Females	701 (100.00)	103 (14.7)	42 (6.0)	16 (2.3)
Age				
< 1 y	469 (100.00)	80 (17.1)	41 (8.7)	18 (3.8)
1-4 y	954 (100.00)	147 (15.4)	51 (5.3)	27 (2.8)
≥ 5 y	171 (100.00)	40 (23.4)	13 (7.6)	6 (3.5)

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### EPIDEMIOLOGICAL SURVEY OF KAWASAKI DISEASE DURING 1995-2000 IN HARBIN, HEILONGJIANG PROVINCE, THE PEOPLES' REPUBLIC OF CHINA

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**Objective.** To describe the incidence and characteristics of Kawasaki Disease (KD) during 1995-2000 in the city of Harbin, Heilongjiang Province, The Peoples' Republic of China. **Methods.** Questionnaires were sent to all hospitals in Harbin, with pediatric beds requesting information on any patients with a Final Diagnosis of Kawasaki Disease. The information requested followed the Questionnaire designed by the Japanese Kawasaki Disease Research Group and included: gender, date of birth, date of initial hospital visit, date of discharge from hospital, final diagnosis, whether the patient had been treated with gammaglobulin and whether there were any cardiac sequelae in 1 month of onset. **Results.** Of the 29 hospitals canvassed in Harbin, 93% responded, reporting 98 cases of Kawasaki Disease during the period January 1995 to December 2000, (56 males and 42 females). Male/female ratio was 1.3. More than a half of the patients (51.02%) were under the age of two years and 86.7% of all patients were less than five years of age. The average yearly incidence under the age of five years was 5.32 per 100,000 children. More cases were reported in 1998, 1999 and 2000, and there were more patients occurred in the spring and summer. Gammaglobulin was given to 72.4% of the cases. Only 6.1% of all cases developed cardiac sequelae, as recognized by ultrasound cardograms. There was no death reported. **Conclusion.** The incidence rate of KD has increased in Harbin since 1998, and was higher than that in other areas of China, but lower than that in Japan. Most of the patients were <5 years old, and more were male. The number of patients was higher in the spring and summer. The proportion of patients with cardiac sequelae was lower than that reported in other areas of China and Japan.

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### CHARACTERISTIC PROFILE OF INTESTINAL MICROFLORA IN KAWASAKI DISEASE

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**Background:** Although the etiology of Kawasaki disease (KD) is still unknown, some investigators suggest that gastrointestinal tract could be one of the primary sites of entry of causative antigens in KD patients. **Objective:** The aim of the present study is to investigate the possible role of intestinal microflora in the pathogenesis of KD. **Patients & Methods:** We studied the distribution pattern of common microbial species in feces from 20 patients with KD, 20 patients with acute febrile diseases (disease control) and 20 healthy children. **Results:** KD patients had significantly lower ( $P < 0.001$ ) incidence of *Lactobacillus* species (2/20, 10%) than disease control patients (16/20, 80%) and healthy children (14/20, 70%). On the other hand, KD patients had no significant incidences of other microbial species (*Staphylococcus*, *Streptococcus*, *Enterococcus*, *Enterobacteriaceae*, *Bifidobacterium*, *Eubacterium*, *Peptostreptococcus*, *Clostridium*, *Veillonella* and *Bacteroides*), compared with both groups of disease control and healthy children. **Conclusion:** The many of acute KD patients lack or lose *Lactobacillus* species which is a non-pathogenic and beneficial micro-organism for humans. The changed ecology of the enteric microflora may be involved in the pathogenesis of KD.