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Research Article

Study of clinical and Paraclinical findings in children with Kawasaki disease admitted to Imam Sajjad Hospital in Yasuj from 2012 to 2016

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ABSTRACT

Background and Aim: Kawasaki is an acute systemic vasculitis with an unknown cause and with an increasing prevalence in childhood that can lead to acquired heart disease. The aim of this study was to evaluate the clinical and demographic manifestations of this disease in children referred to Imam Sajjad Hospital in Yasuj, with the aim of rapid and timely diagnosis of the disease in order to prevent irreparable complications.

Materials and Methods: This case-series descriptive study was performed on 35 patients with Kawasaki who referred to Imam Sajjad Hospital in Yasuj from 1391 to 1395. The diagnostic criteria included fever, skin rash, non-conductive bilateral conjunctivitis, erythema and limb malformation, oral and throat mucosal changes. Age, sex, clinical and paraclinical changes of patients, as well as seasonal incidence of the disease were evaluated.

Results: Of 35 patients, 18 were female (51.4%) and 17 were male (48.6%). The range ranged from 6 months to 8 years. The highest number of visits was in the spring. Fever in 100% of cases, lips and mouth changes (including erythema or strawberry language, or erythema and lips) in 29 cases (82.9%), organ involvement (including edema or scaling of hands and feet) in 21 patients (60%), Non-purulent bilateral conjunctivitis was seen in 19 (54.3%), skin rash in 21 cases (60%), cervical lymphadenopathy in 15 (42.9%) patients. In 77.1% of cases, ESR, 74.3% increase in C-reactive protein (CRP) and 74.3% of normochromenormocyticanemia was reported in laboratory findings. In 34.3% of children, there were cardiac complications.

Conclusion: Considering Kawasaki disease as one of the differential diagnosis in children with long-term fever, resistant to antibiotic therapy, is recommended to prevent cardiac complications due to this disease.

Keywords: Kawasaki disease, vasculitis, children, fever, coronary artery disease, Yasuj

INTRODUCTION

Kawasaki disease (KD) is an acute febrile systemic vasculitis, first reported in 1967 by Dr. Kawasaki in Japan (1, 2, 3, 4, and 5).It is an acute childhood illness that is most commonly seen in all societies, with the highest incidence occurring in the East Asian breed, KD tends to have coronary arteries, and between 25% and 20% of

untreated patients have abnormal coronary artery findings. Like aneurysm (1, 2).

There are currently no accurate statistics on the prevalence of this disease in Iran. In some cross-sectional studies in some parts of Iran, the rate of occurrence in eastern Mazandaran during the years 1997-2002, 29 cases (6), in Fars province from 1990 to 2002, 113 (7) and in Besathospitals of TaminEjtemaee The city of Sanandaj has been reported during the years 2001 to 2005, 20 cases(8).

The cause of the disease is not known yet. However, infectious, immunological, genetic, environmental and, sometimes, a combination of these factors have contributed to the development of this disease (4, 9, 10, 11).

The disease often occurs in children, and especially children under the age of five, and if it occurs in children under one year, the chance for coronary artery disease is greater (2).

Diagnostic criteria for this disease are usually:

Fever, which is often high, lasts at least five days and does not respond to antibiotics and antipyretics. In addition to fever, the main five clinical kinetics of KD are:

1-Non-purulent bilateral conjunctivitis

2. Changes in the oral cavity and mouths: erythema of the mouth and mouth, strawberry language, erythema and lips dryness
3. Extension of polymorphism
4. Cervical lymphadenopathy is usually one-sided and with a diameter of over 1.5 cm
5. Changes in the organs

Acute: erythema palms and legs, edema and legsSubacute: Scaling around the fingers

Diagnosis based on having a fever of 5 days or more accompanied by at least 4 out of 5 high changes (2.5). The most important prevalence of Kawasaki is cardiac involvement. Myocarditis occurs in most of the patients with acute KD and is presented as a disorderly tachycardia with fever accompanied by decreased left ventricular systolic function. Pericarditis with a small amount of pericardial effusion may also occur during the acute phase of the disease. Failure of the mitral valve is evident at least with a slight deterioration in about one quarter of the patients at the time of the onset of the disease, but over time, in rare cases, patients with coronary aneurysm and ischemic heart disease improve. Coronary artery aneurysms develop to 25% of untreated patients in the second to third weeks of illness and are best diagnosed with 2D echocardiography (5).

Treatment of this disease is such that in the acute state 2 g / kg of intravenous gamma globin and a high dose of aspirin (80-100 mg / kg / day, every 6 hours per dilution) should be administered as soon as possible after diagnosis and ideally in Start at 10 days from the onset of the disease (4).

The mechanism of IVIG's effect on KD is unknown, but the treatment results in the rapid elimination and rapid recovery of clinical signs of illness in 80-90% of patients. The incidence of coronary disease in children treated with aspirin alone is 20% -25%, but it is 2-4% in those treated with IVIG and aspirin in the first 10 days (5).

Considering the importance of the disease in children and the irreparable cardiac complications that occur in children and the similarity of this disease with many infectious febrile illnesses, skin, eyes and heart that causes misdiagnosis or sometimes delayed illness In case of lack of diagnosis and timely and appropriate treatment, morbidity and mortality are very high, and on the other hand, the lack of knowledge about the prevalence of this disease despite some studies in some provinces of the country, and due to the uncertainty of the etiology and probability Ethnic, demographic and environmental factors, and lack of regional studies in Yasuj city.

MATERIALS AND METHODS

The present study was a descriptive study in which the clinical and paraclinical findings of children with Kawasaki disease admitted in Imam Sajjad Hospital of Yasuj from 2012 to 2016 were studied cross-sectionally. The study was carried out in a complete set and gathered data using a questionnaire. Age, sex, season of the disease, clinical signs of Kawasaki (CR) and paraclinical symptoms including echocardiography, thrombocytosis, leukocytosis, anemia, high ALT,

low Alb, pyuria, ESR and high CRP were extracted. Also qualitative and quantitative variables were reported separately in terms of relative frequency and mean of both the table and the text. The collected data were analyzed using SPSS software. To describe the data, central indicators and dispersion indicators and frequency distribution tables were used.

FINDINGS

This study was conducted on patients admitted to Imam Sajjad Hospital in Yasuj with a diagnosis of Kawasaki during the last 5 years. 35 patients were diagnosed with Kawasaki and 35 patients were studied. 18 patients (51.4%) were female and 17 patients (48.6%) were male and the sex ratio was 1.05. The age of the patients ranged from 6 months to 8 years with an average age of 43.5 ± 23.5 months and 27 patients (77.1%) under 5 years of age. 11 patients (31.4%) had complete Kawasaki and 24 patients (68.6%) had incomplete Kawasaki.Clinical findings included fever in 35 patients (100%), oral cavity changes including dry and cracked lips and strawberry language in 22 patients (82.9%), cutaneous rash in 21 patients (60%), redness, flatulence and swelling in 21 patients (60%), uncontrolled 2-way conjunctivitis in 19 patients (54.3%) and cervical lymphadenopathy larger than 1.5 cm in 15 (42.9%) patients.

DISCUSSION AND CONCLUSION

Kawasaki disease is similar to many febrile illnesses in terms of clinical manifestations. Therefore, it is suggested that children with prolonged fever and non-response to antibiotic therapy should be evaluated for the disease. In this study, the disease was more prevalent in female (males / females = 1 / 1.057) with reference books, the prevalence of male males relative to females with a significantly higher difference (males / females = (1.5 / 1) was different (14).

This study was reported in studies conducted in Poland, India, China, Taipei, Japan, Italy, Saudi Arabia, Spain, Hong Kong, Tunisia, Jamaica and the United States, respectively (1/0.05), 1/0.04), (1.52 / 1), (1.36 / 1, (1.8. / 1, (3.3 / 1, (1.9 / 1, (1.7 / 1, (3. 6 / 1, (1.71 / 1 and (1.6 / 1) have been reported which were not similar to the present study (12-13).

This ratio was reported in (3.8 / 1, (1.27 / 1 and 1 / 0.05) studies in Tehran, Mazandaran, and Kashan respectively (21-23) with the results of the study the present are different. And, according to a study conducted in Kermanshah, the ratio of male to girl 1 is consistent (23).In this study, the age range of 6 months to 5 years was the most prevalent age of the disease (77.1%). In Safar et al. Studies in Mazandaran, more than 84% of cases have occurred in children under the age of 5 years (22). Reference is also made to the reference book that 80% of cases occur in children younger than 5 years old (5).In this study, the most common season was spring (37.1%), which was consistent with the season of the outbreak in Japan (21), America (14) and Shiraz (25), which showed a high incidence of rotievids in the spring and winter seasons as The justification for this high prevalence is proposed. But in a study conducted in Mazandaran by Safar et al., The disease was more prevalent in autumn and winter chains (22), which could be due to the spread of viral diseases.

Fever was the most common clinical manifestation of Kawasaki disease in Yasuj. In the studies conducted in Tehran (21), Mazandaran (22), Kashan (26), Kermanshah (27), Qazvin (28), Isfahan (29) and most parts of the world (16), the prevalence of fever is 100% has been.

In this post-febrile study, changes in the lips and mouth were the most common clinical findings reported in Saffar in Mazandaran (22), Sharif in Kashan (26) and Tangs in Chinese Taipei (16), respectively 92, 100 and 97.5% they all agree with the study in Yasuj.Bilateral neuromuscular conjunctival inflammation was performed in 19 patients (54.3%) and in studies by Saffar in Mazandaran (22), Sharif in Kashan (26), Soltanzadeh in Tehran (30) and Tesang in Chinese Taipei (16), 92, 85.7, 90.9 and 89.6% of patients.

The rash was 92, 91 and 89.6% in 21 patients (60%) and in studies in Mazandaran (22), Kashan (26) and Tangs in Chinese Taipei (16). In this

study, the prevalence of rash was lower than in other parts of Iran, which may be different justifications for different ethnicities.

Lymphadenopathy was reported in 72 patients and 85.7% in 15 patients (42.9%) and in studies in Mazandaran (22) and Kashan (26). In spite of cervical lymphadenopathy in all studies in Iran, none of the patients with Kawasaki had cervical lymphadenopathy in studies in China (16, 22, and 26).

In this study, sodium regulation (ESR) was more than normal in 27 patients (77.1%). In the studies conducted in Spain (18) and Oman (31), sodium ligation increased in 88% and 91.7% of patients, respectively. Therefore, increasing sodium stretch along with other findings attributed to Kawasaki is in favor of Kawasaki disease diagnosis.

In the present study, increased C-reactive protein (CRP) was reported in 26 patients (74.3%) and 90.5%, 62% and 92.3% respectively in studies performed in Kashan, Spain and Oman (18, 23 and 31). Therefore, the increase in CRP, along with other findings attributed to Kawasaki, is in favor of Kawasaki's diagnosis.

Thrombocytosis was reported in 19 patients (54.3%) and 71.4%, 96% and 96.4% in studies in Kashan, Spain and Japan (18, 19, and 32). In this study, 74.3% of patients had anemia that was similar to Shiraz (25).

In this study, leukocytosis was reported in 82% of cases in 16 patients (45.7%) and in studies in Spain (32%).

Thrombocytosis was reported in 19 patients (54.3%) and 71.4%, 96% and 96.4% in studies in Kashan, Spain and Japan (18, 19, and 32). In this study, 74.3% of patients had anemia that was similar to Shiraz (41).

In this study, leukocytosis was reported in 82% of cases in 16 patients (45.7%) and in studies in Spain (32%).

In this study, echocardiography was reported in 12 cases (34.3%) abnormal and was associated with coronary artery disease. Coronary artery dilatation has been reported in Spain and Oman 11 and 12.5% respectively (17,31). But in studies reported in Shiraz and in most parts of the world, the incidence of coronary artery disease is reported to be between 15% and 25%, as has been mentioned in reference books (5, 14 and 25). The high rate of cardiovascular changes in Yasuj may be due to the late diagnosis or late referral of patients, the number of patients examined, geographical differences, life style,

The duration of follow up is an increase in the incidence of cardiac changes in echocardiography.

Comparison of the results of the present study with other studies shows that most of the results are consistent with each other, and in cases where there is a difference, the following factors can be affected:

1) The spread of various infectious diseases in different parts of the world (given that it is mentioned in most studies as well as in reference books, which is probably an infectious agent causing illness) (5, 14).

2) Different genetic backgrounds in different parts of the world that can interfere with the disease and its manifestations (33).

3) Time to diagnose the disease, the type of treatment and the onset of treatment can lead to different findings (5,14).

The prevalence of Kawasaki disease in Yasuj city in comparison with other areas indicates that girls are more likely to have prevalence than boys, which may have affected some factors such as genetics, geography and weather. Considering that cardiovascular complications of Kawasaki disease were higher than other studies, it can be concluded that the time of diagnosis and treatment of the disease is very important. To prevent the onset of cardiac complications and the cost of the disease.

The study of the prevalence and incidence of this disease and its pattern in each region for faster and better diagnosis of the disease was considered as one of the diagnosis of long-term differentiation of fever without responding to treatment. Long-term trafficking in patients with heart disease, especially It is suggested that the incidence of atherosclerosis and the rate of recurrence of the disease in the future are suggested. Also, in the hospitalized patients with a definite diagnosis that, despite the appropriate treatment of fever, is not

discontinued, a Kawasaki examination should be performed.

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