Kawasaki disease: Marrakech University Hospital Experience

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Introduction

Kawasaki disease (KD) is an acute, febrile, multisystemic vascular syndrome. It's the leading cause of acquired heart disease among children which affects the coronary arteries and may cause cardiac ischemia.

Objective

Evaluation of the clinical manifestations, laboratory parameters, echocardiographic findings at diagnostic and assess the follow-up of KD in children.

Patients and Methods

- Retrospective study
- Studied the clinical data, of all children with KD who had been admitted in the infectious pediatric department at Mohamed VI University Hospital Marrakech.
- From January 2011 to November 2016.

Results

- The study enrolled 50 patients.
- Sex ratio was 1.5.
- The age at the disease onset ranged from 4 months to 12 years. 8 children were younger than 1 year (16%) and 44 were under 5 years of age (88%). Comparison of patient age distribution between children with and without aneurysms is presented on Figure 1.
- The most frequent signs/symptoms at diagnosis are described in Table 1.
- 45 patients had typical KD, 5 had atypical KD.
- All patients had elevated CRP, 95% had elevated ESR while an elevated leukocyte count was observed in 60% and thrombocytosis in 40% of the patients.
- 42% of the echocardiography was performed during the acute stage of the disease.
- There were 16 cases (30%) of KD with lesion of coronary artery: aneurysms in right coronary artery in 2 (4%) patients; aneurysms in left coronary artery in 8 (16%) patients; right coronary artery dilatation in 5 (10%) patients; left coronary artery dilatation in 7 (14%) patients; pericarditis in 2 patients; In 1 child, a aneurysm of the left humeral artery was detected.
- During the follow-up, cardiac involvement was documented in 32 cases; coronary artery dilatation resolved in 2 children.
- The patients that were not found with arterial coronary at the acute stage had no abnormality in the follow-up.
- Aspirin has been used in the treatment of all the patients. 44 patients (88 %) received one dose of intravenous immunoglobulin (IVIG); 4 children required repeated IVIG administration due to persistent fever.
- There was no significant correlation between the abnormality of the echocardiography and the duration of fever in our study.
- One patient was complicated by pleuresia 5 days after IVIG, and only one patient relapsed and died with sepsis and intestinal necrosis.

Figure 1: Comparison of patient age distribution between children with and without aneurysms

Discussion

- The etiology of KD remains unknown; however, epidemiologic evidence suggests the possible role of infectious agents in patients with a genetic background [1].
- The clinical manifestations of KD in our study were similar to previous studies. Fever, oral changes and conjunctivitis were the most common cardinal features. The high rate of white blood cells (WBC), CRP and ESR was similar to other reports.
- The incidence of cardiac involvement varies between different studies; however, literature data indicate that coronary artery aneurysms develop in 25–30% of untreated patients and in 5% of patients treated according to the guidelines [2].
- Myocardial and coronary artery involvement is the main reason for mortality in Kawasaki disease [3].
- In our population coronary artery aneurysms were present in 30% of patients: the majority of them were patients with typical KD. And only one patient relapsed and died with sepsis and intestinal necrosis.
- The most important established factor protecting from complications is an early initiation of immunoglobulin treatment before 7 and 10 days after the symptom onset [4].
- In this study, the response of patients to IVIG and aspirin was good and fever subsided shortly after IVIG administration.

Symptom/sign	Number of patients	Aneurysms
Persistent fever	50 (100%)	16 (32%)
Conjunctivitis	37 (74%)	12 (75%)
Mucosal Changes	40 (80%)	13 (81.25%)
Lymphadenopathy	26 (52%)	8 (50%)
BCG cicatrices change	4 (8%)	1 (6.25%)
Aseptic meningitides	1 (2%)	0
Pleuresia	2 (4%)	1 (6.25%)
Arthritis	1 (2%)	0
Splenomegaly	1 (2%)	1 (6.25%)
Anemia	24 (48%)	11 (68.75%)
Elevated Leukocyte count	30 (60%)	9 (56.25%)
Elevated CRP	50 (100%)	16 (100%)
Elevated ESR	40 (80%)	15 (93.75%)
Elevated platelet count	20 (40%)	9 (56.25%)

Table 1: Rates of specific symptoms and signs in children hospitalized due to Kawasaki disease

Conclusion

Different facts play a role in the diagnostic and management of KD in our context. There is a shortage of pediatric cardiologists in our university hospital, which drains all the cardiac children of the southern regions of Morocco. Further more, even if a diagnosis of KD has been made in time, the expensive cost of IVIG poses difficulties for patients to access therapy.

Références

1 - Khor CC and all, Hong Kong–Shanghai Kawasaki Disease Genetics Consortium; Korean Kawasaki Disease Genetics Consortium; Taiwan Kawasaki Disease Genetics Consortium; International Kawasaki Disease Genetics Consortium; US Kawasaki Disease Genetics Consortium. Blue Mountains Eye Study. Genome-wide association study identifies FCGR2A as a susceptibility locus for Kawasaki disease. Nat Genet. 2011;43(12):1241–6.
2 - Burns JC, Glodé MP. Kawasaki syndrome. Lancet, 2004; 364: 533–544.
3 - Dominguez SR, Anderson MS, El-Adawy M, Glodé MP. Preventing coronary artery abnormalities: a need for earlier diagnosis and treatment of Kawasaki disease. Pediatric Infectious Disease J, 2012; 31: 1217–1220.
4 - Kobayashi T, Saji T, Otani T et al. Efficacy of immunoglobulin plus prednisolone for prevention of coronary artery abnormalities in severe Kawasaki disease (RAISE study): a randomised, open-label, blinded-endpoints trial. Lancet, 2012; 379: 1613–1620.