Epidemiological and clinical features, microbiological findings and prognosis features of pediatric infective endocarditis in a teaching hospital in Tunisia

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Introduction:
Infective endocarditis (IE) is a serious disease secondary to fixation and multiplication of germs in the endocardium. In children, it is a disease on the rise for decades. Its prevalence varies between 0.42 and 1.35% admissions to pediatric services. Morbidity and mortality of this disease are still significant despite advances in microbiological diagnosis, medical and surgical treatment.

Objectives:
The aim of this work is to study clinical, microbiological, therapeutic and outcome features of IE in children.

Methods:
Retrospective study including 24 children with IE collected in the pediatric department of Sahilou Hospital (Sousse) over a period of 19 years (from 1995 to 2013). Duke criteria was used to establish the diagnosis of IE.

Results:
Most of patients were female (62.5%). The mean age at diagnosis was 5 years old (40 days-13 years). Children with IE had congenital heart diseases (CHD) in 17 cases (70%), rheumatic heart diseases in 2 cases (10%) and had a previously healthy heart in 5 cases (20%).

Cardiac ultra Sound profile:
Echocardiography showed vegetation in all cases (Fig. 2, 3), with predominance of mitral valve damages (table II).

Discussion:
IE is a serious illness that often complicate heart diseases in children. It still frequent all over the world. In France, approximately 30 cases of IE are collected every year, 10% of these cases occurs on a plot of CHD. The diagnosis of IE is established after reference to the modified Duke criteria (Table III).

Many microorganisms, generally isolated by blood culture can produce infective endocarditis. In the litterature, streptococcus (>40%), staphylococcus (40%) and rarely negative-gram bacilli (10%) are the most common organisms responsible for IE. Blood culture can be negative in 5-10% of cases. In our study, staphylococcus is the most bacteria identified as a cause of IE. Echocardiography is the gold standard for the diagnosis of IE. However, in some cases, even echocardiography can not show lesions of IE especially when valvular abnormalities are associated to shunts. This fact is explained by the difficulty of distinguishing between pre-existing anomalies and infectious damages (vegetations).

The treatment is a bi-germ appropriate antibiotics for 4 to 6weeks. Surgical treatment is indicated in cases of severe sepsis when not controlled by antibiotics, hemodynamic complications, vegetation>10mm or abscess. The risk of recurrence of IE is difficult to assess, but probably rises to about 20%. Mortality of the disease remains high, varying from 10 to 25% in the literature.

Conclusion:
Despite major advances in diagnosis and surgical treatment, IE in children is a serious and severe disease. We hope to decrease its prevalence by applying the preventive measures in the assessment of patients with CHD and this through information and education of both patients and families.