PERICARDITIS IN CHILDREN: EXPERIENCE OF A MOROCCAN UNIVERSITY HOSPITAL

F. BENNAOUI1,2, N. EL IDRISSI SLITINE1,2, G. DRAISS3,2, M. BOUSKRAOUI3,2 , F.M.R MAOULAININE1,2
1: Neonatal intensive care unit, Marrakech university hospital
2:Childhood Health and Development Research Team, FMPM, Cadi Ayyad University.
3: Infectious pediatric A unit, Marrakech university hospital

Introduction

Pericarditis is an acute inflammatory disease of the pericardium. Pericarditis in children is infrequent. It can arise from a wide variety of etiology, that influence the management and the long term evolution of the child.

Objective

Describe the profile and outcome in children with acute pericarditis in a developing country.

Patients and Methods

The medical records of all patients, with a diagnostics of acute pericarditis admitted in the infectious pediatrics unit, Mohamed VI University Hospital Marrakech, during January 2015 to November 2016, were analyzed retrospectively for their etiology, presentation, management, and prognosis.

Results

- The study enrolled 8 patients.
- 6 boys and 2 girls with a mean age: 10.75 (range: 5 years to 14 years).
- The predominant symptoms were chest pain, tachypnea, and fever.
- Cardiomegaly was a constant feature in all patients.
- Echocardiography was performed between the first and twentieth days of hospitalization, 6 children had pericardial effusion, and 2 had cardiac tamponade.
- The etiology of pericarditis was as follows: purulent or bacterial pericarditis in 4 (50%) cases, tuberculosis in 2 (25%) cases, and rheumatic fever in 2 (25%) cases.
- 2 patients (25%) underwent pericardiocentesis and only one child required pericardiotomy.
- Echocardiographic follow up performed in less than one month showed: one case of dry pericarditis, 2 cases of small pericardial effusion and 4 cases were normal. There was no constrictive pericarditis.
- 7 patients had a good evolution. However, one patient died of an acute pulmonary edema.
- Summary of the main features of the patients and their management is presented on Figure 1
- Median duration of evolution towards the disappearance of clinical signs after treatments was 32.5 days (interquartile range 5 to 60 days).

Patient no	Sex	Age Years	Etiology	Associated illness	Type of Pericarditis	CRP	ESR	Culture of Pericardial fluids	Medical Treatment	Surgery	Evolution
1	F	14	Tuberculosis		Tamponade	43	55	Negative	Steroid Antituberculosis drug	-	Good
2	M	12	rheumatic fever		Effusion	121	56	Negative	Steroid Antibiotic	-	Good
3	F	10	Purulent		Effusion	204			Antibiotic NSAID	-	Good
4	M	12	Rheumatic fever	Septicemia	Effusion	229	103		Steroid Antibiotic	-	Died of an acute pulmonary edema.
5	M	6	Tuberculosis	Septicemia, pleural effusion	Effusion	96		S. aureus	Antituberculosis drug, Antibiotic,	+	Good
6	M	5	Purulent		Effusion	184			NSAID Antibiotic	-	Good
7	M	14	Purulent	pleural effusion	Tamponade	78	82	Negative	Antibiotic Paracetamol	+	Good
8	M	13	Purulent		Effusion	122	80	Negative	Antibiotic Paracetamol	-	Good

Figure 1: Summary of the main features of the patients and their management

Discussion

- Pericarditis in children is infrequent with sparse epidemiological data. Pericarditis accounts for <0.2% of the emergency visits of children without prior heart disease presenting with chest pain to a tertiary pediatric emergency setting [1].
- Although the diagnosis of acute pericarditis in a young patient with typical chest pain seems easy, identifying the etiology may be quite difficult. The cause of pericarditis are extensive [table 2] [2].
- There is no high quality data to guide the diagnosis and management of acute pericarditis in the pediatric population. Chest X-ray, EKG, and echocardiogram should be performed to rule out an associated pericardial effusion[2].
- In our population, chest radiograph and echocardiogram were performed in all cases.
- Additional investigations such as Antinuclear antibody, rheumatoid factor, blood culture, and viral culture may be reasonable to search for an underlying cause for pericarditis [2].
- Non steroidal anti-inflammatory (NSAID) drugs are likely an appropriate first line treatment fore acute pericarditis in children and adolescents [2].
- In this study, only 2 patients had been treated by NSAID, the others were treated by Paracetamol and the response was good.
- Sequelae of acute pericarditis includes pericardial effusion, tamponade, recurrent pericarditis, and pericardial constriction [3]. Several months later, our patients were not known to have experienced recurrence.

TABLE . Causes of Acute Pericarditis
Idiopathic
Infectious (viral, bacterial, fungal, parasitic)
Uremia
Acute myocardial infarction
Neoplasm
Endocrinopathy (hypothyroidism)
Postcardiac injury (trauma, surgical, catheter wire, thoracic aortic dissection)
Autoimmune (systemic lupus erythematosus, rheumatoid arthritis, rheumatic fever, ankylosing spondylitis, systemic sclerosing periarteritis nodosa, Reiter syndrome, drug hypersensitivities)
Radiation

Table 2: Causes of Acute Pericarditis

Conclusion

Management of pediatric pericarditis is influenced by the cause of the pericarditis. Nevertheless, etiologic diagnostic and treatment may involve several laboratory testing and investigations, which are not widely available or practiced in our developing country.

Références

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2 – Kelly Marie van Diepen DM and al. An interesting Case of viral pericarditis. Pediatric Emergency care J, 2016; 32: 5.
3 – Dudzinski DM, Mak GS, Hung JW. Pericardial diseases. Curr Probl Cardiol. 2012;37:75-118