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RHEUMATIC FEVER: A DISEASE THAT SHOULD NOT YET BE FORGOTTEN

Aida Omerčahić-Dizdarević, Velma Selmanović, Adisa ČengiĆ

Department of Allergology, Rheumatology and Clinical Immunology, Children's Hospital, University Clinical Center Sarajevo, Bosnia and Herzegovina, Phone: 033 566 417, 061 157 609, e-mail: aida.omercahic@gmail.com

Abstract

Objective: Although the incidence of acute rheumatic fever (ARF) has significantly decreased, individually reported outbreaks of the disease still occur in developed countries. The aim of this report is to present three patients with an initial attack of ARF, treated in the Department for Allergology, Rheumatology and Clinical Immunology during 2012 and 2013.

Methods: The medical records of these three patients with ATF – who were treated in our department during the abovementioned period, and whose diagnoses were established according to the revised Jones criteria from 1992 – were reviewed.

Results: Of the three patients, two were female (13 and 17 years old) and one was male (9 years old). Clinical and laboratory data were: migrating arthritis (3); carditis (1); fever (3); raised inflammatory markers – erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) (3) – and a prolonged PR interval on electrocardiogram; and first-degree heart block (3). All patients had elevated antistreptolysin titres and all were evaluated by echocardiography. One patient had mitral regurgitation. We introduced streptococcus eradication therapy with penicillin, therapeutic doses of aspirin, corticosteroids (for the patient with carditis) and secondary prevention of streptococcal infections with 4-weekly doses of benzathine penicillin G. Patients have been monitored as outpatients, and as yet there is no evidence of recurrence of the disease or its complications.

Conclusion: ARF still occurs occasionally in developed countries. It is a disease that has not been eradicated, and this should not be forgotten in our efforts to reduce long-term morbidity and mortality.

Key words: polyarthritis, carditis, rheumatic fever, prophylaxis

Introduction

Rheumatic fever was a common disease and the leading cause of valvular heart disease in the pre-antibiotic era.(12) Use of antibiotics in the treatment of streptococcal pharyngitis significantly reduces the incidence of ARF, but this disease should still be considered in the differential diagnosis of rheumatic and heart diseases. Rheumatic fever is characterised by the inflammation that occurs due to vasculitis, which is the result of an immune response to streptococcal infection. It occurs most often in school-age children, and has a known cause: tonsillopharyngitis caused by the β -hemolytic streptococcus group A. Streptococcal infection and the first signs of ARF are separated by a latency period of 2-3 weeks. In this period the patient is asymptomatic. The Jones criteria are the main diagnostic guide combining major and minor signs.(6) Major signs are: arthritis; carditis; chorea; erythema marginatum; and subcutaneous nodules. Minor signs are: fever and arthralgia; increased CRP values; and a prolonged PR interval on an ECG.(10) All manifestations of the disease can fully subside, apart from heart valve disease. Destruction of valves, which is characteristic of rheumatic heart problems, remains the most common cause of acquired heart disease globally. Rheumatic fever, as a nonpurulent complication of streptococcal disease, can be prevented by appropriate treatment of streptococcal pharyngitis. This paper aims to show the presentation of rheumatic fever in three patients treated in the Department of Allergology, Rheumatology and Clinical Immunology in 2012 and 2013.

Methods

Three patients were suffering from the first attack of rheumatic fever. Diagnosis was established by two major criteria, or one major and three minor criteria. Historic data on gender, age and pharyngitis preceding the disease were reviewed. At admission ESR, CRP, antistreptolysin O titre (ASO) and throat swabs were taken. The ASO titre was considered elevated if values were >320 Todd u/mL. ECG and echocardiography were done routinely in all three patients. Polyarthritis was defined as joint swelling, local hyperemia, warmth, pain and limited range of motion in two or more joints. Carditis was diagnosed based on clinical findings, heart auscultation and echocardiography.

Results

Three patients (one male and two female) with the first attack of rheumatic fever were treated in our department during 2012 and 2013. The average age of patients was 13 years. Clinical manifestations were as follows: two patients had arthritis, and one patient had arthritis and carditis (valvulitis detected by echocardiography). Chorea, erythema marginatum, and subcutaneous nodules were not present in this group of patients. Laboratory characteristics were that all patients had elevated ASO titre, and high ESR and CRP. All patients showed prolonged PR interval on ECG

(AV block I degree) and all had preceding pharyngitis. Two patients were insufficiently and inadequately treated with antibiotics, and the third was not treated at all. Patients were treated according to the protocol, with acetilsalicylic acid. The patient with carditis received methylprednisolone. Primary prophylaxis was performed (streptococcus eradication therapy) followed by secondary prophylaxis with benzathine penicillin G every 28 days. To date there has been no recurrence of rheumatic fever, or appearance of any complications.

Discussion

Rheumatic fever is a public health problem in developing countries, but still occurs occasionally in industrialised areas, where it can cause rheumatic heart disease. (1) Its aetiology is well-known: delayed diagnosis, and inadequate recognition and treatment of streptococcal pharyngitis. Rheumatic heart disease (the most serious form of ARF), is preventable, and knowledge of clinical manifestations allows early diagnosis and administration of appropriate therapy.(13) The average age in our case study was 13 years, which is higher than in other studies.(1,3) School children are at greatest risk of ARF, as they spend a great deal of time in poorly ventilated communal spaces. This can lead to recurrent pharyngitis caused by β -hemolytic streptococcus. In our case study, more female children presented. This is in line with what was published in the Orun study (8), while other studies have shown a higher prevalence of male children.(1) In our study, arthritis was the most common major sign, which is in correlation with many other studies.(1,7) One patient had carditis, which was the second most common major characteristic of the disease. Some studies have reported carditis as the most common major sign, which can be explained by the routine application of an echocardiographic examination, leading to a better diagnosis of heart changes in children with rheumatic fever.(1,2) Our patient with carditis had an affected mitral valve. Many other studies supported frequent involvement of the mitral valve, which was followed by involvement of the aortic valve.(7) Chorea prevalence varies from <2-30% (10). The patients in our series did not have chorea, subcutaneous nodules or erythema marginatum. In accordance with the Jones criteria, echocardiographic changes without clinical findings were not considered as rheumatic carditis. Australian and New Zealand ARF guides suggest that subclinical carditis, particularly echocardiography valvulitis without clinical course supported carditis, should be considered as part of the major characteristics of ARF.(10,12) In our study, all patients had a history of preceding pharyngitis. Two patients were insufficiently and inadequately treated, and the third was not treated with antibiotics. Throat swabs were negative on admission. Determination of the ASO titre has no diagnostic value for ARF, but represents evidence of a preceding streptococcal infection.(13) An elevated ASO titre can be expected in 85% of cases (11), and was present in all three of our patients. All patients are undergoing secondary prophylaxis with benzathine penicillin G. To date, there is no evidence of disease recurrence or complications.

Conclusion

Our case study indicates that ARF is still present, and can cause rheumatic heart disease. Paediatricians should routinely consider the diagnosis of streptococcal pharyngitis and acute rheumatic fever, with an aim to reducing long-term morbidity and mortality.

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