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Original Article

Benign acute childhood myositis in the eastern region of Kingdom of Saudi Arabia; a 5-year experience

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الملخص

أهداف البحث: تقييم الخصائص الوبائية، والسريرية، والمخبرية، ونتائج علاج الأطفال المصابين بالتهاب العضلات الحميد الحاد لدى الأطفال الذين تم تشخيصهم بالمستشفى التعليمي بالمنطقة الشرقية بالمملكة العربية السعودية.

طرق البحث: تمت الدراسة عن طريق استقصاء بحثي استعادي لملفات الأطفال المصابين بالتهاب العضلات الحميد الحاد المنومين بمستشفى الملك فهد الجامعي بالخبر بالمملكة العربية السعودية، في الفترة من يناير ٢٠٠٨م إلى ديسمبر ٢٠١٢م. لتحليل الخصائص الديموجرافية، والسريرية، والمخبرية، وتفاعل المرضى مع مرضهم.

النتائج: تم تسجيل إصابة ٣٠ حالة مرضية خلال فترة الخمس سنوات، مما يعطي مؤشرا لانتشار المرض بنسبة ٣,١٧ لكل ١٠٠.٠٠٠ طفل. كانت نسبة الأطفال الذكور للإناث ٦: ١، وكان متوسط أعمارهم ٦ سنوات، ولوحظ ارتفاع حدوث المرض في فصل الشتاء. وكانت عدم القدرة على المشي هي الشكوى الأكثر ظهورا بين المرضى حيث سجلت في جميع الحالات بنسبة ١٠٠٪، ثم شكوى التهاب الجهاز التنفسي العلوي بنسبة ٧٠٪. أما العلامة السريرية الأكثر حدوثا فكانت بقاء الانفعال العكسي لعضلات الركبة لدى ١٠٠٪ من الحالات، وإيلام عضلات الربلة عند فحصها ٧٦,٦٪ أما النتائج المخبرية فقد أظهرت ارتفاع أنزيم الفسفوكيناز الكرياتين في الدم عند ١٠٠٪ من الحالات، وقلة الكريات البيض عند ٦٠٪ منهم.

الاستنتاجات: أظهرت نتائج الدراسة أن الخصائص الوبائية والسريرية والمخبرية للأطفال السعوديين المصابين بالتهاب العضلات الحميد الحاد مشابهة لتلك الحالات المنشورة في المجلات العلمية من مناطق مختلفة بالعالم. وتقترح الدراسة إجراء دراسة استقصائية على مستوى المملكة لتسجيل الحالات وتحديد نسبة الإصابة به، وتحديد العوامل المسببة له وكيفية الاستجابة السريرية للمرض.

الكلمات المفتاحية: التهاب العضلات الحميد الحاد لدى الأطفال; فسفوكيناز الكرياتين; المملكة العربية السعودية، إيلام عضلة الربلة، قلة الكريات البيض

Abstract

Objective: To assess the epidemiological, clinical and laboratory characteristics, and outcomes of BACM in children diagnosed at a teaching hospital in the eastern province of the KSA.

Methods: A retrospective study of 28 patients admitted to the hospital with the diagnosis of BACM was carried out at King Fahd Hospital of the University, AlKhobar, Kingdom of Saudi Arabia (KSA), from January 2008 to December 2012. Demographics, clinical characteristics, laboratory findings and patients' responses were analyzed.

Results: Thirty episodes were reported over 5 years with incidence of 3.17 per 100,000. The male to female ratio was 6:1. The mean age was 6 years. A seasonal peak during the winter months was observed. The major symptoms were fever, inability to walk in all the patients (100%) and symptoms of upper respiratory tract infections found in 70%. Major clinical findings were the normal deep tendon reflex and calf muscle tenderness in 76.6% and 100% respectively. The prominent laboratory findings were the high creatine phosphokinase (CPK) and leukopenia in 100% and 60%, respectively.

Conclusion: Our findings showed that the clinical and epidemiological features associated with BACM, in the KSA, have the similar pattern of other studies from different regions in the world. A nationwide survey,

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however, is necessary to investigate the overall incidence, risk factors and the outcome of BACM in the KSA.

Keywords: Benign acute childhood myositis; Creatinine phosphokinase; Calf muscle tenderness; Leukopenia; Saudi Arabia

Introduction

BACM is a well-recognized disease first described by Lundberg in 1957 when he reported cases with what is called myalgia cruris epidemica.[1]

It is characterized by severe calf pain and tenderness and inability to walk, preceded by symptoms of upper respiratory tract infection. It mainly affects school age boys and associated with viral agent like influenza virus[2,3] with high prevalence in winter and spring.[4] Also, there are reported cases associated with mycoplasma and dengue virus.[5,6]

Serum creatine phosphokinase (CPK) is elevated in the majority of the affected patients.[7] Also there is a decrease in total white blood cells and an increase in the liver enzymes.[8]

Since the inability to walk is the major presenting feature and the most concerning to parents, and since it is a presentation with a list of differential diagnosis including serious diagnoses like Guillain Barre syndrome and acute flaccid paralysis caused by poliomyelitis[9]; the pediatricians take this issue seriously and try to exclude the potentially serious or potentially infectious causes at the beginning through appropriate clinical and laboratory assessment tools.

Almost all the cases will resolve spontaneously within days of the onset of the disease including the gradual improvement of the walking ability concurrently with gradual improvement in the laboratory findings.

Although there are many reported cases in the literature from elsewhere, however; there are very few reports about this entity from the Middle East. There are no reported cases or description of the pattern of this disease in Saudi children population.

The aim of this study is to evaluate the clinical and laboratory findings associated with this entity retrospectively in the pediatric age group who were admitted to King Fahd Hospital of the University, eastern province of the Saudi Arabia.

Materials and Methods

The medical records of children admitted to pediatric ward with diagnosis of BACM at King Fahd Hospital of the University; Al- Khobar, Kingdom of Saudi Arabia between January 2008 and December 2012 were reviewed retrospectively. The following variables were retrieved from their files: age, sex, prodromal symptoms, family history of muscle diseases, change in urine color and any physical or neurological abnormalities. Laboratory data like serum creatine kinase (CPK), urine for myoglobin, white blood cell counts(WBCs), Platelet counts, C-reactive protein (CRP), serum aspartate aminotransferase (AST), alanine aminotransferase (ALT), lactate dehydrogenase(LDH), blood urea nitrogen (BUN) and creatinine levels were recorded from the health computer system of the hospital.

The inclusion criteria were as follows: acute onset of symptoms, presence of calf muscle pain or tenderness, gait disturbance and increased serum CPK level. The exclusion criteria were as follows: family history of muscle diseases, presence of neurological abnormalities in the clinical examination and presence of concurrent immune-complex disease.

Statistical analysis: Frequency tables were performed to get the descriptive statistics for the categorical variables, while the continuous data means and percentages were calculated as descriptive values.

Data analysis was done using SPSS version 20.0 for windows (SPSS, Chicago IL, USA).

Results

Total of 29 patients were admitted to the pediatric ward during this period. One patient had been excluded from the study because he was diagnosed with metabolic disorder. Three of the patients had recurrent episodes and there were 2 pairs of siblings affected at same time.

Half of episodes presented during the winter months of December, January and February (n: 15; 50%), while the rest of episodes presented in clusters; Figure 1.

The age of patients ranged from 2 to 11 years with median age of 6 years, 24 of them were boys (85.7%) and 4 were girls (14.3%).

The prodromal symptoms included: fever (100%), cough (70%) and sore throat (20%). Prodromal illness of 2–10 days preceded the onset of pain with median duration of 7 days; Table 1.

All the patients presented with bilateral calf pain (100%), while inability to walk was recorded in 28 episodes of BACM (93.3%). Calf tenderness was found in 23 episodes (76.7%). All the patients had normal deep tendon reflexes, and the clinical recovery was complete in all patients within one week from the initial presentation.

Laboratory findings showed increased CPK in all the episodes ranging from 297 to 36,852 U/L (normal 75–230 U/L), in the other hand leukopenia was found in 18 episodes (60%) and thrombocytopenia was presented in 4 episodes (13.3%). AST was high in 13 episodes (43.3%) while ALT was high in 6 episodes (20%) and both tests were not done in 15 episodes. CRP was positive in 7 episodes (23.3%) and was not done in 8 episodes, while the lactate dehydrogenase was normal in 16 episodes and was not done in 14 episodes, however; BUN and creatinine were normal in all patients; Table 2.

Urine myoglobin was negative in 23 episodes and was not done in other 7 episodes. No virology study was done for any of the patients.