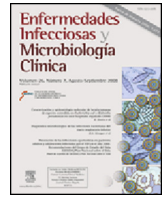




Enfermedades Infecciosas y Microbiología Clínica

www.elsevier.es/eimc



Original article

Scarlet fever: A not so typical exanthematous pharyngotonsillitis (based on 171 cases)



César García-Vera^{a,*}, Bárbara de Dios Javierre^b, Beatriz Castán Larraz^b, Teresa Arana Navarro^a, Teresa Cenarro Guerrero^a, Rafael Ruiz Pastora^a, Javier Sánchez Gimeno^a

^a Primary Health Care Centre "José Ramón Muñoz Fernández", Zaragoza, Spain

^b University Childrens Hospital "Miguel Servet", Zaragoza, Spain

ARTICLE INFO

Article history:

Received 28 June 2015

Accepted 17 September 2015

Available online 14 November 2015

Keywords:

Scarlet fever

Pharyngitis

Tonsillitis

Centor score

Child

ABSTRACT

Aim: To describe the age, signs and clinical symptoms of children with scarlet fever at the present time, and to check whether they are equivalent to those with traditional streptococcal pharyngotonsillitis.

Study design: An observational, retrospective study was conducted on the clinical records of 5500 children aged from 0 to 15 years attending a primary health care center. A record was made of the percentage of the cases in which signs and symptoms appear and the Centor score was calculated. Microbiological diagnosis of the disease was made using the rapid antigen-detection test or traditional culture.

Results: A total of 171 out of 252 scarlet fever diagnoses were microbiologically verified in 158 patients. The median age was 3.8 years (interquartile range: 2.91–4.78), with the majority (57%) under the age of 4 years. There was fever in 89% of the processes (95% CI: 84–94%), with a temperature of $>38^{\circ}\text{C}$ in 73% (95% CI: 65–80%), enlarged lymph nodes in 70% (95% CI: 58–82%), absence of cough in 73% (95% CI: 65–80%), and tonsillar exudate in only 24% (95% CI: 17–31%). The Centor score ($n = 105$) was ≤ 2 points in 86% (95% CI: 79–92%). The only difference regarding age is that episodes in patients under the age of 4 years old have significantly higher fever ($>38^{\circ}\text{C}$) than the older ones (80% versus 63%. OR 3.13; 95% CI: 1.46–6.71).

Conclusion: Scarlet fever pharyngotonsillitis differs from the traditional streptococcal pharyngotonsillitis, and its evaluation using clinical prediction rules such as Centor or McIsaac is questionable. The main diagnostic key must certainly be rash, regardless of patient age.

© 2015 Elsevier España, S.L.U. and Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica. All rights reserved.

Escarlatina: una faringoamigdalitis exantemática no tan típica (a propósito de 171 casos)

RESUMEN

Objetivo: Describir la edad, signos y síntomas clínicos de niños con escarlatina en la actualidad y comprobar si corresponden a los de la clásica faringoamigdalitis estreptocócica.

Diseño del estudio: Estudio observacional, retrospectivo, sobre registros clínicos (5.500 niños de 0 a 15 años pertenecientes a un centro de atención primaria). Porcentaje de casos en los que aparecen los signos y síntomas y cálculo del score de Centor. Diagnóstico microbiológico realizado mediante test rápido de detección de antígeno o cultivo tradicional.

Resultados: De 252 diagnósticos de escarlatina se confirmaron microbiológicamente 171, en 158 pacientes. La mediana de la edad fue de 3,8 años (rango intercuartílico: 2,9–4,8), la mayoría (57%) menores de 4 años. Hubo fiebre en un 89% de episodios (IC 95: 84 a 94%), mayor de 38°C en el 73% (IC 95: 65 a 80%), adenopatías en un 70% (IC 95: 58 a 82%), ausencia de tos en un 73% (IC 95: 65 a 80%), y exudado amigdalar sólo en un 24% (IC 95: 17 a 31%). El score de Centor ($n = 105$) fue ≤ 2 puntos en un 86% (IC 95: 79 a 92%). Los niños <4 años tienen significativamente más fiebre ($>$ de 38°C) que los mayores (80% frente a 63%. OR 3,13; IC 95: 1,46 a 6,71).

Palabras clave:

Escarlatina

Faringitis

Amigdalitis

Escala de Centor

Niño

* Corresponding author.

E-mail address: cgarciavera@gmail.com (C. García-Vera).

Conclusión: La faringoamigdalitis de la escarlatina difiere de la clásica estreptocócica y ha de ser cuestionada su valoración a través de reglas de predicción como las de Centor o Mclsaac. La clave diagnóstica principal continúa siendo la erupción cutánea independientemente de la edad del paciente.

© 2015 Elsevier España, S.L.U. y Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica. Todos los derechos reservados.

Introduction

Among the beta-hemolytic Group A *Streptococcus* (GAS) infections in children, scarlet fever is known for its peculiarity and incidence. It consists mainly of a pharyngitis by GAS strains which synthesize a pyrogenic exotoxin (erythrogenic toxin types A, B or C) which determines the typical papular erythematous rash of the disease by non-immediate hypersensitivity reaction.

The pharyngotonsillar GAS (PAS) infection in childhood is described as an exudative tonsillitis with acute start, febrile, occasionally with feeling seriously sick and cervical lymphadenopathy, usually with no coryza symptoms but which particularly affects children aged from 4 to 18 years old.

Traditionally, scarlet fever pharyngotonsillitis was described as indistinguishable from the one of the PAS.^{1,2} However, the clinical presentation of scarlet fever in the most recent and limited publications which describe it does not fall within the age described (it appears ever more frequently under the age of 4) and it seems not to show either all the PAS symptoms described or so developed.^{3–6}

To assess the PAS clinical suspicion, two valid pediatric scores exist: the Centor clinical prediction score (Table 1)⁷ originally designed to be used in adults; and the Mclsaac clinical prediction score which adds one more grade for ages age from 3 to 15 and considers tonsillar swelling as positive (despite no exudate).⁸ A study on 1848 children aged from 3 to 18 years old who suffered from pharyngitis at three primary health care pediatric centers showed how many pharyngitis were produced by GAS, according to Mclsaac's grades, and even being graded with the maximum score, only 60% of them were PAS.⁹ This justifies the current recommendation of confirming them through the rapid antigen-detection test for GAS (RADT) or traditional culture before starting an antibiotic treatment. Today, most clinical practice guidelines^{10–20} accept that, in order to diagnose PAS, either previously explained scores or any other clinical item selection should be used to choose those patients to whom RADT or traditional cultures will be applied. Despite the limitations resulting from the assessment of just scores or items selection, in the case of absence of these tests, the scores should prove useful to select the patients who will be given antibiotic therapy.¹⁶

To verify whether scarlet fever pharyngitis is similar to PAS (that is, if it meets its criteria), the scarlet fever cases at our primary health care center in recent years have been reviewed, describing the frequency of its main signs and symptoms and assessing the Centor and Mclsaac scores appropriateness for the scarlet fever pharyngotonsillitis diagnosis.

Table 1

Centor clinical scoring scale⁷ to classify risk of GAS and guide management of acute pharyngitis. Clinical diagnosis if Centor score is ≥ 3 . Mclsaac clinical scoring scale⁸ adds one more grade for ages age from 3 to 15 and considers tonsillar swelling as positive (despite no exudate).

Point	Criteria
1	Fever $>38^{\circ}\text{C}$
1	Swollen tender anterior cervical nodes
1	Tonsillar exudate
1	Lack of cough

Patients and methods

A retrospective, observational cross-sectional study which arises from the digital clinical records from an urban primary health care center (Zaragoza, Spain) of 5500 children aged from 0 to 15 allocated to four pediatricians. From these records, the registers of the clinical episodes known as scarlet fever were drawn. Also reviewed were all the tonsillitis and pharyngotonsillitis diagnoses, in order to recover those in which rash, compatible with scarlet fever was present but which had not been appropriately classified when diagnosing. Traced dates start from the first diagnosis on digital record at the center (December, 2004) to the 31st of March, 2014.

Finally, all the episodes without microbiological confirmation were excluded (RADT, culture or both) as well as those on clinical record which had limited data. Since November, 2011, RADT has been available at our primary health care center (Alere Test-Pack Strep A, sensitivity 97.6% [95% CI: 93.1–99.5%], and specificity 98.4% [95% CI: 95.9–99.6%], information provided by Alere Medical Co.). Prior to that, pharyngeal swab was carried out and biological samples were transferred under adequate conditions and means of transport to carry out the traditional culture tests at the reference hospital (Microbiology laboratory, Hospital Universitario Miguel Servet, Zaragoza, Spain).

Patients with illnesses or treatments that might cause immunosuppression were also excluded.

From clinical records, the main variable acquired was the confirmed diagnosis of scarlet fever in a child with compatible rash. The presence or absence of the following were secondary variables: fever, cough, coryza symptoms, swollen tender anterior cervical nodes, tonsillar swelling, tonsillar exudate and the characteristic signs of scarlet fever (strawberry tongue, Filatow mask, Pastia lines, petechiae on the soft palate). Highest fever and epidemiological variables including age, sex, episode date and, if there were, any previous episodes of the disease were also registered. Data related to the use of antibiotic therapy were also obtained (antibiotic treatment or not, which one, and its duration). If there was any scarlet fever complication, it was also gathered.

The statistic management was based on a descriptive analysis of the items, in percentages, with their 95% confidence interval. In order to describe quantitative variables that do not follow a normal distribution (age, Kolmogorov–Smirnov test, D_{\max} : 0.133; $p = 0.005$), the median and the interquartile range were calculated. In order to compare the pharyngotonsillar features that our patients showed with respect to the PAS classic, the Centor and Mclsaac scores were calculated (Table 1). As a notable deviation from the disease at traditionally established younger ages was detected, the appearance of different events of the disease in children under the age of four in contrast to those of four years old or over was compared using the odds ratio (OR) estimation and its 95% confidence interval. The analysis was performed using statistics calculators (Centro de Medicina Basada en la Evidencia Tecnológico de Monterrey, http://cmbe.net/?page_id=296) and the SPSS statistical package software, and p value <0.05 was taken as the significance level.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee. The informed consent cannot be obtained a posteriori due to the fact that this is a retrospective

Download English Version:

<https://daneshyari.com/en/article/3400508>

Download Persian Version:

<https://daneshyari.com/article/3400508>

[Daneshyari.com](https://daneshyari.com)