

The in-hospital treatment of erysipelas using cephalosporin, ciprofloxacin or oxacillin

Authors: Andressa Ribeiro, MD, Andre Luis Cozetto de Oliveira, MD, Fernando Batigalia, MD, PhD
Adress: Medicine School of São Jose do Rio Preto-FAMERP- Avenida Brigadeiro Faria Lima, 5416- São Jose do Rio Preto-Brazil- CEP:15090-000

E-mail: cozetto@gmail.com * author correspondence

Published: April 2012
Journal Phlebology and Lymphology 2012; 5:6-8

Received: 13 February 2012
Accepted: 17 March 2012

Abstract

Erysipelas is an acute, sometimes recurrent, skin infection frequently caused by group A beta-hemolytic *Streptococcus*. The aim of this study was to evaluate the in-hospital treatment of erysipelas using cephalosporin, oxacillin and ciprofloxacin. A retrospective quantitative cohort study was conducted to analyze the clinical effectiveness of cephalosporin, oxacillin and ciprofloxacin as first line antibiotics for patients hospitalized in Hospital de Base, São José do Rio Preto with erysipelas in the period 2000 to 2008.

A total of 309 patients were hospitalized to treat erysipelas; 18 were treated with cephalosporin (three ceftriaxone, five cephalexin and nine cephalothin), 11 with ciprofloxacin and 17 with oxacillin. Treatment failure occurred in 11% of patients who took cephalosporin, 9% of the ciprofloxacin patients and no patients who were prescribed oxacillin.

Oxacillin, ciprofloxacin and cephalosporin are therapeutic options for patients hospitalized with erysipelas.

Keywords: erysipelas, antibiotics, cephalosporin, ciprofloxacin, oxacillin

Letter to the Editor

Erysipelas is an acute, sometimes recurrent, skin infection frequently caused by group A beta-hemolytic *Streptococcus* although infections due to other agents such as streptococcus and staphylococcus have been reported^{1,2}. The infectious process involves the dermis and hypodermis, involving lymph ducts and causing a subcutaneous infection in addition to the cellulite per se³.

Erysipelas is a seasonal disease that affects adults and the elderly, it has a repetitive nature and is associated with comorbidities³. It is considered a universal infection, with an estimated incidence of 200 cases per 100,000 inhabitants/year⁴. The diagnosis of erysipelas is based on a careful examination for local signs and symptoms⁵.

Treatment regimens vary with penicillin G being one of the commonest options^{3,4,5}. However, several other antibiotics are indicated as they have proven to be effective⁵⁻⁸.

The aim of this study was to evaluate the in-hospital treatment of erysipelas using cephalosporin, oxacillin and ciprofloxacin.

Methods

A retrospective quantitative cohort study was performed of all patients with erysipelas hospitalized in Hospital de Base, São José do Rio Preto in the period from 2000 to 2008. Patients treated with cephalosporin, oxacillin and ciprofloxacin were identified and the efficacy of each drug was analyzed.

The diagnosis of erysipelas was based on clinical signs and symptoms such as fever greater than 37.8°C, chills, increased temperature of the limb and local hyperemia.

All patients submitted to antibiotic treatment for erysipelas initially using only cephalosporin, ciprofloxacin or oxacillin were included in this study. Patients with lost or incorrect records and those under antibiotic therapy for less than three days were excluded.

Statistical analysis was performed using the Fischer exact test with an alpha error of 5% (p-value < 0.05) being considered acceptable.

The study was approved by the institution's Ethics Research Committee (protocol # 080/2008) and as this was a retrospective study, patient consent was not considered necessary.

Results

Eight female and ten male patients (mean age of 51 ± 26.3 years old) old took different types of cephalosporin (three ceftriaxone, five cephalexin and nine cephalothin). Six women and five men (mean age of 57.3 ± 19.5 years old) were treated with ciprofloxacin and seven women and 10 men (mean age 58.4 ± 18 years old) were treated with oxacillin.

Of the patients who were treated with cephalosporin, treatment failed in two cases (11.1%) and the antibiotic was changed for clindamycin. Therapy was successful in one case and the antibiotic was changed to oxacillin after an antibiogram for the other. Among those who were prescribed ciprofloxacin, the treatment failed for one patient (9%) and the antibiotic was substituted for clindamycin. The therapy was successful for all patients who were treated with oxacillin for erysipelas (Table 1).

In relation to the length of hospitalization, the average stay was 4.5 ± 1.9 days for those who took cephalosporin, 5.4 ± 2.6 days for those who took ciprofloxacin and 5.4 ± 2.3 days for those who took oxacillin.

Table 1: Therapeutic response to cephalosporin, ciprofloxacin, and oxacillin in the treatment of erysipelas

Total patients	Antibiotic therapy used	Response to treatment			%
		Success	Remained unchanged	failure	
18	cephalosporin	16	2	11.1%	
11	ciprofloxacin	10	1	9.0 %	
17	Oxacillin	17	0	0	

Discussion

This study retrospectively evaluated the random use and the clinical success of cephalosporin, ciprofloxacin and oxacillin in the treatment of erysipelas in hospitalized patients. The aim was to evaluate treatment failure using these different options on the ward where antibiotic resistance is of constant concern. However, the clinical response was highly successful; the general rate was above 88% and oxacillin had a 100% success rate.

Antibiotic treatment for erysipelas is empirical; it is known that the main agent is streptococcus and that Penicillin G has been reported as the first-line therapy^{9,10}. However a series of other antibiotics have been suggested such as the macrolides, clindamycin and cephalosporin⁵⁻⁷.

In this study, good responses were observed using the antibiotics analyzed, however the sample size is small and it is impossible to conclude whether there are significant differences between these treatment options.

Recurrence is the most frequent complication (25%) and so treatment of risk factors is essential¹¹. In 46 cases analyzed, there was only one readmission for erysipelas 10 months after the first episode.

Another publication from the same service as this study reported that there are significant associations between erysipelas with other comorbidities. Associated diseases include hypertension, diabetes mellitus, chronic venous insufficiency and other cardiovascular diseases including angina, peripheral arterial disease, myocardial infarction and stroke, obesity, chronic renal failure, cancer, cirrhosis, chronic lymphedema and leg ulcers^{3,12}. These data warn about the effect of comorbidities on the evolution of patients. Another study examined the causes of mortality in patients hospitalized with erysipelas and found that pneumonia, sepsis and cancer were significantly correlated with death¹².

Other aspects to consider are the length of hospitalization and the existence of multiresistant bacteria in hospitals. Thus, after control of the infection it is wise to discharge the patient and monitor evolution in the outpatient clinic.

Conclusions

Oxacillin, ciprofloxacin and cephalosporin are therapeutic options for patients hospitalized with erysipelas.

References

1. Grosshane: Erysipelas: Clinicopathological classification and terminology. *Ann Dermatol Venereol* 2001; 128 :128:307- 11.
2. Bonnetblanc JM, Bedane C: Erysipelas: recognition and management. *Am J Clin Dermatol* 2003; 4(3):157- 63.
3. Pereira de Godoy JM, Galacini Massari P, Yoshino Rosinha M, Marinelli Brandão R, Foroni Casas AL. Epidemiological data and comorbidities of 428 patients hospitalized with erysipelas. *Angiology*. 2010 Jul;61(5):492-4. Epub 2010 Feb 10.
4. McNamara, DR, Tleyjeh, IM, Berbari, EF, et al. Incidence of lower-extremity cellulitis: a population-based study in Olmsted county, Minnesota. *Mayo Clin Proc* 2007; 82:817.
5. Krasagakis K, Valachis A, Maniatakis P, Krüger-Krasagakis S, Samonis G, Tosca AD. Analysis of epidemiology, clinical features and management

- of erysipelas. *Int J Dermatol.* 2010 Sep;49(9):1012-7.
6. Kilburn SA, Featherstone P, Higgins B, Brindle R. Interventions for cellulitis and erysipelas. *Cochrane Database Syst Rev.* 2010 Jun 16;(6):CD004299.
 7. Eriksson B, Jorup-Rönström C, Karkkonen K, Sjöblom AC, Blom SE. Erysipelas: clinical and bacteriologic spectrum and serological aspects. *Clin Infect Dis* 1996; 23:1091–1098.
 8. Krasagakis K, Valachis A, Maniatakis P, Krüger-Krasagakis S, Samonis G, Tosca AD. Analysis of epidemiology, clinical features and management of erysipelas. *Int J Dermatol.* 2010 Sep;49(9):1012-7.
 9. Eriksson B, Jorup-Rönström C, Karkkonen K, Sjöblom AC, Blom SE. Erysipelas: clinical and bacteriologic spectrum and serological aspects. *Clin Infect Dis* 1996; 23:1091–1098.
 10. Dupuy A: Descriptive epidemiology and knowledge of erysipelas risk factors. *Ann Dermatol Venereol* 2001; 128:312–16.
 11. Crick C: Erysipelas: evolution under treatment, complications. *Ann Dermatol Venereol* 2001; 128:358-62.
 12. Rosinha, MY, Massa, PG, Brandão, RM, Casas, ALF. Prevalence of mortality in patients hospitalized due to erysipelas and related comorbidities. *Journal of Phlebology and Lymphology* 2010; 3:8-10 (April 2010).
 13. Pereira De Godoy JM, Augusto Dos Santos R, Vilela Filho RA, Guerreiro Godoy Mde . Erysipelas and ulcer of the legs in patients with lipolymphedema. *Eur J Dermatol.* 2011 Jan-Feb;21(1):101-2.