

Prevalence of mortality in patients hospitalized due to erysipelas and related comorbidities

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Abstract

The aim of this study was to evaluate the prevalence of mortality and causes of death of patients hospitalized due to erysipelas. The in-hospital mortality rate of patients with erysipelas in Hospital de Base, São José do Rio Preto was evaluated for the period from 1999 to 2008 in a retrospective cross-sectional study. The cause of death, gender, age and length of hospital stay were analyzed. The Fisher exact test was utilized for statistical analysis with an alpha level of 5% (p -value < 0.05) being considered acceptable. A total of 219 women and 209 men with a mean age of 58.6 years were hospitalized with erysipelas. Of these, 1.7% of the patients died (5 women and 2 men); 3 patients on the first day of hospitalization, one on the 2nd, one on the 10th, one on the 11th and one on the 12th day after admittance. The causes of death were neoplasms (3 patients), pneumonia (2), sepsis (4), renal failure (1), cirrhosis (1) and purulent pericarditis (1); some patients had concomitant comorbidities. Of these, neoplasm, pneumonia and sepsis were significantly associated with death. Erysipelas is not a lethal disease when adequate treatment is provided, however comorbidities can cause death.

Key words: Erysipela, comorbities, prevalence.

Introduction

Acute bacterial skin infections with different presentations and varying gravity are very common ⁽¹⁻³⁾.

The severity of streptococcal infections depends upon the virulence of individual strains with the most important species being the beta-hemolytic group A streptococci (GAS) ⁽²⁾. Cellulitis should be clinically distinguished from erysipelas and necrotizing fasciitis. Leg erysipelas and cellulitis occur in more than one in every 1000 individuals per year ⁽¹⁾.

Erysipelas is generally associated with high fever and adenopathy; lymphangitis is sometimes present ⁽⁴⁻⁶⁾. At the time of diagnosis, it is important to look for clinical

markers of severity (local signs and symptoms, general signs and symptoms, co-morbidities, social context etc.) which may require the hospitalization of the patient ⁽⁷⁾. Quick and accurate diagnosis and treatment are imperative to prevent significant morbidity and mortality ⁽³⁾.

For erysipelas, antibiotic treatment at home, when feasible, is much less expensive and as effective as hospital treatment. In cases of patients that are hospitalized, a longer hospital stay has been observed for: older patients, individuals with associated diseases, longer duration of illness prior to admission, and the presence of a leg ulcer ⁽⁶⁾. Study conclude that most

patients with repeated erysipelas have significant and even permanent abnormalities in regional lymphatic drainage. Recurrent erysipelas suggests underlying primary or secondary lymphedema ⁽⁸⁾. Complications occur in up to 31% of the cases and generally require

surgical debridement, reconstruction surgery or amputation ⁽¹⁰⁾. Mortality is low (0.5%) and due to systemic complications rather than to the severity of local symptoms ⁽⁶⁾. In Ericksson's series there were no deaths as a direct result of erysipelas however, some

Method

The in-hospital mortality of patients with erysipelas in Hospital de Base, São José do Rio Preto was evaluated for the period from 1999 to 2008 in a retrospective cross-sectional study. The following parameters were analyzed: the prevalence of death according to cause, gender, age and duration of the hospital stay.

After approval of the Research Ethics Committee, data were collected from the computerized hospital records and stored on a Microsoft Excel spreadsheet. The Fisher exact test was employed for statistical analysis with an alpha level of 5% (p-value < 0.05) being considered acceptable.

Results

A total of 219 women and 209 men with a mean age of 58.6 years were hospitalized with 1.7% of the patients evolving to death (5 women and 2 men).

The hospital stay of all patients varied between 1 and 32 days with a mean of 5 days. Three patients died on the first day of hospitalization, one on the 2nd, one on the 10th, one on the 11th and one on the 12th day after admittance.

The causes of death according to the patients' death certificates were neoplasms (3 patients), pneumonia (2), sepsis (4), renal failure (1), cirrhosis (1) and purulent pericarditis (1); some patients had concomitant comorbidities. Of these, neoplasm, pneumonia and sepsis were associated with death (Table 1).

Table 1: the comorbidities of patients who evolved to death

	Total patients	Mortality	p-value*
neoplasms	7	3	0.0003
sepsis	7	4	0.0000
Pneumonia	7	2	0.0002
Cirrhosis	21	1	0.2
Renal failure	29	1	0.3

* Fisher exact test

Discussion

The current study evaluated the deaths of patients hospitalized with the diagnosis of erysipelas and identified the causes of death. There are few published studies that evaluate in-hospital death associated with erysipelas. However, the disease has been associated with men, the presence of multiple comorbidities, heart failure, morbid obesity, hypoalbuminemia, renal failure, and cellulitis caused by pseudomonas aeruginosa ⁽⁸⁾.

A logistic regression model found age, burns, immunosuppressive treatment and iatrogenic procedures prior to the infection to be significant predictors of death, with odds ratios of 1.7 (per decade), 19.7, 3.6 and 6.8, respectively ⁽⁹⁾. In bacteremic patients with erysipelas, mortality increased from 8% to 50% when bullae were observed ⁽⁹⁾. Study identified 90 articles describing >28,000 patients with complicated SSSI. For cellulitis/erysipelas, cure rates were 66% (95% CI, 64%-68%) without antibiotics and 98% (95% CI, 96%-99%) for penicillin-treated patients, and penicillin reduced mortality by 10% ⁽¹⁰⁾.

In this study, five women and two men died, thus no significant difference was found in respect to gender. Several comorbidities were present in this population of patients with associations being identified between erysipelas and neoplasms, sepsis and pneumonia. Only one patient died with cirrhosis and another with renal failure however the sample size was small. This should act as a warning and further studies with a larger number of patients are necessary to better understand the relationship between erysipelas and comorbidities.

Death by sepsis occurred on the first two days after admission suggesting that, even though both patients were elderly and suffered comorbidities, the disease was not adequately treated.

The severity of infections caused by streptococcus depends on the virulence of the strain and the individual's immunological resistance. Atypical cases should be distinguished and may evolve with necrotizing fasciitis and other complications (12). It is important to look for clinical markers of the severity

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(local signs and symptoms, general signs and symptoms, comorbidity, social context, etc.) that may require the hospitalization of the patient.

The morbidity and mortality in erysipelas is associated with comorbidities where prophylactic care and rapid clinical interventions may minimize complications.

Conclusion

Erysipelas is not a lethal condition when adequate treatment is provided, however comorbidities may lead to death, with neoplasms, pneumonia and sepsis being associated with death.

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