

ORIGINAL ARTICLE

**Necrotising fasciitis attended in the Emergency
Department in a tertiary hospital: Evaluation of the
LRINEC scale[☆]**



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KEYWORDS

Necrotising soft tissue
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Abstract

Aim: To describe mortality and complications of patients seen in the emergency room, diagnosed with necrotising soft tissue infection (NSTI) and the correlation of such complications with the Laboratory Risk Indicator for Necrotising fasciitis scale (LRINEC).

Methods: Retrospective observational study including patients with a diagnosis of NSTI in the emergency room of a tertiary hospital over 7 years. The results are shown as median, interquartile range and absolute range for quantitative variables. In the case of qualitative variables, the results are shown as absolute and relative frequency. The comparison between the categories of the LRINEC scale was performed through a post hoc comparison from a non-parametric ANOVA analysis. Comparisons between LRINEC groups in the qualitative variables were performed using Fisher's Exact test.

Results: 24 patients with a mean age of 51.9 years were identified. The LRINEC scale was used on 21 patients: in 10, the value indicated low risk (<6), in 4 it indicated intermediate risk (6 or 7) and in 7 it indicated high risk (≥8). The amputation rate in patients with low, intermediate and high risk was 10%, 25% and 66% respectively with a mortality of 4.2%. There was an increase in hospital stay between the low and high level of the scale ($p=0.007$).

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PALABRAS CLAVE

Infección necrosante de partes blandas; Amputación; Mortalidad

Conclusions: In general, a change in the prognosis between the medium and high levels of the LRINEC scale could not be recorded, but was recorded in hospital stay between the low and the high level, practically tripling the median of days of hospital stay.

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Infecciones necrosantes de partes blandas atendidas en un servicio de urgencias de tercer nivel: evolución y correlación con la escala laboratory risk indicator for necrotising fasciitis (LRINEC)

Resumen

Objetivo: Describir la mortalidad y las complicaciones de pacientes atendidos en urgencias, con diagnóstico de infección necrosante de partes blandas (INPB) y su correlación con la escala *Laboratory Risk Indicator for Necrotising Fasciitis* (LRINEC).

Método: Estudio observacional retrospectivo con inclusión de pacientes con diagnóstico de INPB en urgencias de un hospital terciario durante 7 años. Los resultados se muestran como mediana, rango intercuartílico y rango absoluto para las variables cuantitativas. En el caso de las variables cualitativas, como frecuencias absoluta y relativa. La comparación se ha llevado a cabo mediante comparación post hoc a partir de un análisis ANOVA con aproximación no paramétrica. Las comparaciones entre grupos de LRINEC en las variables cualitativas se han realizado con la prueba exacta de Fisher.

Resultados: Se identificaron 24 pacientes con edad media de 51,9 años. La escala LRINEC se determinó en 21 pacientes: en 10 indicó bajo riesgo (<6), en 4 riesgo intermedio (6 o 7) y en 7 alto riesgo (≥8). La tasa de amputación en riesgos bajo, intermedio y alto fue del 10, 25 y 66%, respectivamente, con una mortalidad del 4,2%. Se observa un aumento en la estancia hospitalaria entre los niveles bajo y alto de la escala ($p=0,007$).

Conclusiones: En general no se ha podido constatar un cambio en el pronóstico entre los niveles medio y alto de la escala LRINEC. Pero sí entre la estancia hospitalaria entre el nivel bajo y el alto, triplicando prácticamente la mediana de días de estancia hospitalaria.

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Introduction

Necrotising soft tissue infection (NSTI) is an entity that is characterised by necrosis of the skin, subcutaneous cellular tissue, fascia, muscle or several of the said structures simultaneously. It progresses very swiftly, compromising limb viability and even the patient's life.¹⁻³ Although this is a rare infection it still has a high rate of morbimortality which can be reduced by early diagnosis and treatment.^{4,5} Nevertheless, it is very hard to distinguish between NSTI and cellulitis in its early phases. The Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) scale has been validated in an attempt to ensure the early diagnosis of NSTI. This is based on levels of haemoglobin, glucose, C-reactive protein (CRP), creatinine, natremia and the number of leukocytes.^{6,7} This work aims to describe the mortality and complications of patients seen in the emergency room with a diagnosis of NSTI, together with their correlation with the LRINEC scale.

Material and methods

The clinical records of all the patients with a confirmed diagnosis in our hospital of NSTI in a limb from January 2001

to February 2008 were reviewed retrospectively. This study included all of the patients who, in debridement following the clinical diagnosis of suspected NSTI by the emergency department, displayed surgical findings that are characteristic of necrotising infection: devitalised fascia easily dissected by the fingers between planes, or the finger test, the presence of purulent exudate or "dish-water pus", the absence of bleeding and regional vascular thrombosis, and who were diagnosed histopathologically as necrotising fasciitis. The following data were recorded: age, sex, comorbidity, infection location, possible entry site of the infection, main symptoms, analytical results at admission, septic shock and the diagnosis of suspicion at admission. Additionally, the antibiotic treatment given at admission was recorded, together with the time passed between the arrival of the patient at the emergency department to surgical debridement, resected tissue histology, the number of operations, isolated microorganism, whether or not the limb was amputated, the duration of hospitalisation and mortality. The LRINEC score was calculated in all of the cases for which the necessary data were available (Table 1).

The results are shown as the median, interquartile range and absolute range for the quantitative variables. The results of qualitative variables are shown as absolute and

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