

**Author(s): Merel Knubben, Edward Tan, Sander van Stigt**

**Prognostic values for mortality in necrotising fasciitis in 5 hospitals in the Netherlands between 2003 and 2017.**

**Background:** Necrotising fasciitis (NF) is a severe soft tissue infection with a high mortality. The diagnosis is often difficult. The LRINEC score was developed in Asia as a diagnostic tool. This score might also have prognostic implications. This will be the first study in Western Europe to evaluate the LRINEC score in patients with NF.

**Aim:** The aim of this study was to increase an existing database with data of patients presenting with NF in five teaching hospitals in the Netherlands. By increasing this database we hope to determine whether known prognostic values, such as the LRINEC score, are also applicable in the Dutch population and to assess whether there are more prognostic determinants for mortality in patients presenting with NF.

**Methods:** Follow-up to a retrospective cohort study conducted in 2014. All patients >18 years presenting with clinical signs and symptoms of NF between January 2003 and December 2017 in five hospitals from the Nijmegen teaching region and who were admitted to the ICU for at least 24 hours were included in this research.

**Results:** 123 patients with necrotizing fasciitis were included. The overall mortality was 31.7% (N=39). In 108 cases the LRINEC score could be calculated. The overall mean LRINEC score was  $7.4 \pm 2.7$ . Patients who died as the result of NF had a significantly higher median LRINEC score (8 vs. 7,  $p=0.034$ ). Other parameters associated with mortality are age  $\geq 60$  years (44.3% vs. 19.4%,  $p=0.006$ ), cardiovascular disease in the medical history (42.9% vs. 24.%,  $p=0.049$ ),  $\geq 2$  comorbidities (41.9% vs. 16.3%,  $p=0.005$ ), and lactate level greater than 1.7 mmol/L (33.7% vs. 8.7%,  $p=0.036$ ).

**Discussion:** LRINEC score should be calculated in all patients presenting with NF to provide an additional source for clinical outcome. A high LRINEC score could implicate a higher risk of mortality. Especially in elderly patients, with a cardiac history, more than two comorbidities or a lactate level greater than 1.7 mmol/L.

**Table 1 The Laboratory Risk Indicator for Necrotising Fasciitis (LRINEC score)**

		Score
C-reactive protein (mg/l)	<150	0
	≥150	4
Leukocyte count (10 <sup>9</sup> /l)	<15	0
	15-25	1
	>25	2
Haemoglobin (mmol/l)	>8.4	0
	6.8-8.4	1
	<6.8	2
Sodium (mmol/l)	≥135	0
	<135	2
Creatinine (μmol/l)	≤141	0
	>141	2
Glucose	≤10	0
	>10	1
Maximal total		13