

# NEED OF ENDOSCOPIC NECROSECTOMY IN WALLED-OFF PANCREATIC NECROSIS TREATED WITH LAMS: A PROSPECTIVE VALIDATION OF A PREDICTIVE CLINICAL INDEX

S. Bosso; G. Rizzatti; G. Tripodi; F. Borrelli de Andreis; F. Attili; A. Milani;  
A. Gasbarrini; C. Spada; A. Larghi

Policlinico A. Gemelli IRCS, Rome, Italy

## Introduction

EUS-guided drainage by means of Lumen-Apposing Metal Stent (LAMS) represents a minimally invasive treatment of Walled-Off Pancreatic Necrosis (WOPN). In order to achieve a better infection control endoscopic necrosectomy (EN) may be required in a subset of patients, whose early identification may therefore represent a valuable clue in the clinical management of patients with WOPN.

## Methods

Firstly we retrospectively evaluated 53 patients (“**training group**”) diagnosed with WOPN (16 females and 37 males, aged 28- 87) admitted to our Institution over the period 2013-2023. In 24 cases (45.3%) EN was required and then performed after LAMS placement.

In this group, we identified a predictive **Necrosectomy-index (NI)**, able to provide an “a priori” identification of patients requiring EN, by means of a discriminant-function statistical analysis, taking into consideration only the variables showing a statistical difference (single tail  $p < 0.10$ ) between the patients requiring EN and the remaining subjects.

Thereafter, **NI** predictive value and clinical reliability (global accuracy and overall statistical significance) were prospectively tested in a separate set of patients with WOPN (“**challenge group**”), consisting of 53 patients (15 females and 38 males, aged 23- 85).

## Results

In the “**training**” **group**, the retrospective analysis of our data allowed to calculate individual **NI** by means of the simple function:

$$\text{NI} = 336 - (\text{PT}\% * 1.26 + \text{Hb (g/dL)} * 29.54 + \text{PLT (kU/mm}^3) * 0.11 - 48.56 * \text{EUS}^1)$$

<sup>1</sup>EUS subjective rank of collection’s features (0 = fluid; 1 = solid debris; 2 = purulent; 3 = necrosis < 50%; 4 = necrosis > 50%; 5 = completely necrotic).

The **NI** provides an early identification of the subset of patients requiring EN after LAMS placement (identified by  $\text{NI} > 0$ ). To increase the predictive ability of the model, the subjects with a **NI** close to 0 (between 3 and -3) may be considered “undeterminable”, being therefore addressed to EN on the basis of the clinical status.

In the prospectively evaluated “**challenge**” **group**, **NI** showed a remarkable overall statistical significance ( $p < 0.01$ ). The results allow us to confirm **NI** clinical value (global accuracy of 73.3%, 68.2% predictive value for positivity and 78.3% for negativity) in the early identification of patients further requiring EN. Three patients only (5.7%) showed a **NI** between 3 and -3, being therefore considered as “undeterminable”.

## Conclusions

Our data provided a prospective validation of the proposed **NI**, confirming its reliable intrinsic predictive value. **NI** may therefore represent a powerful clinical tool in WOPN management, providing an early identification of patients requiring further EN after LAMS placement.