**Risk prediction in patients undergoing Endoscopic Necrosectomy for infected pancreatic necrosis**

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**Aims**

Laparotomy for the treatment of patients with infected pancreatic necrosis is associated with high rates of morbidity (~95%) and mortality (~50%); this has driven the development of minimally invasive alternatives for the treatment of such cases. Endoscopic Transgastric Necrosectomy (ETN) is becoming an accepted method for debriding infected necrosis in these challenging cases. The P-POSSUM scoring system is a well-validated risk stratification tool and is now used nationally for patients undergoing emergency laparotomy. This work aims to determine whether patients undergoing ETN for infected pancreatic necrosis can be risk stratified accurately using the P-POSSUM scoring system.

**Methods**

Prospective data were collected on all patients undergoing ETN for infected pancreatic necrosis in a single UK centre. All patients initially underwent an EUS guided stent placement to create a cystgastrostomy before subsequent transgastric necrosectomy.

Patient demographics, timing of procedures and short-term post procedural outcomes were recorded. P-POSSUM scores were calculated at the time of the endoscopic cystgastrostomy.

Demographic data were descriptively summarized, and ROC analysis was performed to assess the diagnostic accuracy of the P-POSSUM score. Data were analysed using SPSS version 22.

**Results**

Thirty-three patients underwent ETN between 2011 and 2017 with a median age of 52 years (range 21-84). Median number of interventions per patient was 5 (range 2–14); 60% of the patients were male and 42% required ITU admission. The overall morbidity was 40% (13 patients). Five patients died (15%) at between 10 to 53 days after their initial cystgastrostomy.

Mean overall predicted mortality for ETN using P-POSSUM was 5.5% (p<0.001, unpaired T-test); range 0.4%-42%. All those who died had a predicted mortality of >5%, equivalent to a Physiology score of >28. Of those with a Physiology score >28, 42% died (p=0.004, Fisher exact), with the average predicted mortality of 10.9% (range 5.8%-14.7%).

ROC analysis identified an area under the curve (AUROC) of 0.849 (SE =0.071; p<0.001) for morbidity and 0.904 (SE = 0.053; p < 0.005) for mortality.

**Conclusions**

P-POSSUM is a very useful tool in identifying patients at high-risk of mortality (and to a lesser extent morbidity) following Endoscopic Transgastric Necrosectomy, however, P-POSSUM underestimates the absolute mortality rate. Using a Physiology score of >28 allows us to identify a high-risk patient group, thereby informing decision making and discussions with family, patients and allied health care professionals.