

4th International Conference on Gastroenterology

July 20-22, 2015 Orlando, USA

Is waterlow score a surrogate marker for predicting adverse outcome in acute pancreatitis?

Hadir Elbeltagi, Gillick Kieran and Bhattacharya Sayan
Peninsula Medical School, UK

Background: The Waterlow scoring system, originally introduced to stratify risk for developing decubitus ulcers, is routinely recorded for surgical admissions. It is a composite score, reflecting patients' general condition and co-morbidities. We aimed to investigate whether Waterlow score could be used as an independent surrogate marker to predict severity and adverse outcome in acute pancreatitis.

Methods: In this retrospective analysis we studied a consecutive cohort of 250 patients presenting with acute pancreatitis, all of whom had their Waterlow score calculated on admission. Primary outcome measures were length of hospital stay and mortality. Secondary outcome measures included rates of ITU admission and development of complications such as peri-pancreatic free fluid, pancreatic necrosis and pseudocyst formation. We also analysed correlation of Waterlow score with some known markers of disease severity and outcomes.

Results: Waterlow score correlated strongly with the most commonly used marker of disease severity, Glasgow score (ANOVA, $p=0.001$). Inpatient mortality rate of ITU admission and length of hospital stay increased with Waterlow score (Mann-Whitney U test, $p=0.0005$, $p=0.05$, $p=0.0002$ respectively). There was however no significant association of Waterlow score with incidence of three known complications of pancreatitis: presence of peri-pancreatic fluid, pancreatic pseudocyst formation and pancreatic necrosis. ROC curve analysis demonstrated good predictive power of Waterlow score for mortality (area under curve=0.73), ITU admission (area under curve=0.65) and length of stay (area under curve=0.64), comparable to the predictive power of Glasgow score and CRP.

Conclusions: Routine consideration of Waterlow score in patients admitted with acute pancreatitis could provide a useful tool in prospective assessment of disease severity, help clinicians with appropriate resource management and inform patients.

hadir.elbeltagi@students.pcmd.ac.uk

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