

## Diagnosis and Management of Blunt Pancreatic Trauma

Dániel Kollár<sup>1</sup>, Tamás F. Molnár<sup>1,2</sup>, Péter Zsoldos<sup>1</sup>, Zoltán Benedek-Tóth<sup>1</sup>, Attila Oláh<sup>1</sup>

<sup>1</sup>Department of Surgery, Petz Aladár Teaching Hospital, Győr, Hungary

<sup>2</sup>Department of Operational Medicine, University Medical School of Pécs, Hungary

### Abstract

**Introduction:** Blunt or penetrating pancreatic trauma represents only 0.2-2% of all trauma cases and approximately 3-12% of all abdominal injuries. While treatment protocol debates of other intra-abdominal and thoracic organ injuries seem to reach comforting conclusions, satisfying evidence-based recommendations regarding the pancreas have not been released yet. However, high grade trauma of the pancreas can lead to substantial morbidity and mortality. The question is, when and how to treat it conservatively or operatively.

**Objectives/Methods:** This study is a review of contemporary literature on children and adult pancreatic trauma management strategies and findings. The purpose is to evaluate current classifications and the efficacy of subsequent non-operative and operative treatments. We list the established grading systems starting from physical examination, imaging diagnosis, to indications for surgery or conservative management, followed by post-treatment morbidity and mortality rates.

**Conclusions:** Current operative or non-operative management strategies are not based on randomized - or even, in fact, on prospective – clinical trials. Most of the available publications demonstrate small retrospective patient cohorts and expert opinions. To date, no convincing high level (at least Level III) evidence-based recommendations have been published in terms of treatment of these injuries. There is a general agreement, that the injury of the main pancreatic duct is the thin red line, dividing conservative and operative strategies. Low grade pancreatic injury can be treated conservatively not significantly different from protocols developed for mild pancreatitis of other origin. Pancreatic duct damage in adults requires either minimal invasive intervention or exploration and reconstruction/resection via laparotomy. Treatment strategies of high grade paediatric pancreatic injuries remain controversial. Associated organ injuries can mask the symptoms of pancreatic trauma. Missed main pancreatic duct injuries pose a clinically challenging situation with serious complications and considerable mortality. Pancreatic injury in polytrauma poses the highest risk. Present perspectives for survival of pancreatic injury as mono trauma varies between 95-100%, while as a part of polytrauma, the mortality rate is as high as 30-35%. Multicentre prospective, randomized clinical trials would be ideal to support optimal decision making. Heterogeneity of cases and relative rarity of the pathology makes the creation of such a database highly unlikely.

**Key words:** blunt abdominal trauma, pancreatic transection, distal pancreatectomy, pseudocyst, interventional radiology