



ESTIMATING FATTY PANCREAS: PREOPERATIVE BEDSIDE ASSESSMENT BY BIOELECTRIC IMPEDANCE ANALYSIS. IMPLICATIONS FOR PANCREATIC SURGERY

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Background and aims

Pancreatic steatosis, also known as fatty pancreas, is an acknowledged risk factor for the development of postoperative pancreatic fistula (POPF). Aims of the study was to evaluate whether fatty pancreas could be estimated by fat mass measurement by preoperative bioelectric impedance analysis (BIA). Preoperative computed tomography (CT) scan and pathologic evaluation were used as validation methods. Moreover, the three methodologies were tested for their ability in predicting postoperative pancreatic fistula.

Methods

75 patients who underwent pancreatic resection were analyzed. Preoperative CT attenuation in Hounsfield unit (CT-HU) were used to assess fatty pancreas. BIA was performed the day before surgery and fat mass index (FMI) was calculated. Pancreatic steatosis was assessed by pathologists at the line of surgical transection. The ability of the methods in predicting postoperative pancreatic fistula (POPF) was evaluated by the area under the receiver operating characteristics curves (AUC).

Results

There was a strong correlation between CT-HU values and grade of pancreatic steatosis evaluated at histology ($r = -0.852$, $p < 0.001$) and a moderate correlation between FMI and histologic pancreatic steatosis ($r = 0.612$, $p < 0.001$) and between CT-HU value and FMI ($r = -0.659$, $p < 0.001$) values. The AUC was 0.942 (95% CI 0.879-1) for the histology, 0.924 (0.844-1) for CT-HU, and 0.884 (0.778-0.990) for FMI.

Conclusions

BIA represents a valid alternative to assess pancreatic steatosis.

