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ASSOCIATION OF INDIRECT MEASUREMENT OF CELL FUNCTION BY BIOIMPEDANCE ANALYSIS WITH COMPLICATIONS IN ONCOLOGIC HEPATIC SURGERY

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Background and aims

Bioimpedance vector analysis (BIVA) is a reliable tool to assess body composition. The aim was to study the association of BIVA-derived phase angle (PA) and standardized PA (SPA) values and the occurrence of surgery-related morbidity.

Methods

patients undergoing hepatectomy for cancer in two Italian centers were prospectively enrolled. BIVA was performed the morning of surgery. Patients were then stratified for the occurrence or not of postoperative morbidity.

Results

Out of 190 enrolled patients, 76 (40%) experienced postoperative complications.
Patients with morbidity had a significant lower PA, SPA, body cell mass, and skeletal muscle mass, and higher extracellular water and fat mass. At the multivariate analysis, presence of cirrhosis (OR 7.145, 95% CI:2.712-18.822, p<0.001), the Charlson comorbidity index (OR 1.236, 95% CI: 1.009-1.515, p=0.041), the duration of surgery (OR 1.004, 95% CI:1.001-1.008, p=0.018), blood loss (OR 1.002. 95% CI: 1.001-1.004, p=0.004), dehydration (OR 10.182, 95% CI: 1.244-83.314, p=0.030) and SPA < -1.65 (OR 3.954, 95% CI: 1.699-9.202, p=0.001) were significantly and independently associated with the risk of complications.

Conclusions

SPA value< -1.65 is associated with a higher risk of developing complications after liver resections. Introducing BIVA before hepatic resections may add valuable and independent information on the risk of morbidity.