

Predictive Role of Child Pugh and MELD Scores after Elective Liver Resection

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Introduction. Nowadays, Child-Pugh and “model of end stage liver disease” (MELD) scores are mainly used for patients undergoing elective liver resection, according to clinical and three month survival outcomes.

Aim. The goal of the study is to assess the predictive role of Child-Pugh and MELD scores in the assessment of short term clinical outcomes and hospital stay after elective liver resection surgery.

Material and Methods. A retrospective review and statistical analyses were performed on 53 patients consecutively admitted for elective liver resection surgery from 2010 to 2014 December at Pauls Stradins Clinical University Hospital, Riga, Latvia. Child-Pugh and MELD scores were calculated preoperatively in order to examine their association with clinical outcomes and hospital stay. Main short-term clinical outcomes included development of hyperbilirubinemia, pulmonary edema or embolism, and acute kidney injury (AKI) within one week postoperatively.

Results. In total, 53 patients of mean age of 56 years who underwent partial hepatectomy (n = 45) or total right/left hepatectomy (n = 8) were included in the study. 43 patients underwent surgery due to malignancy. Incidence of the analysed clinical outcomes was as follows: pulmonary edema or embolism developed in 4 (7%), AKI in 2 (4%) and hyperbilirubinemia in 6 (11%) cases. Median MELD score was 7 ± 1.4 and Child-Pugh 5 ± 1 before surgery. MELD score was statistically higher preoperatively for those who had hyperbilirubinemia postoperatively 8.5 vs. 6.9 ($p = 0.01$), in contrast to Child-Pugh which was consistent between the patients. Difference was not found regarding AKI and pulmonary embolism. MELD score was independently associated with the development of hyperbilirubinemia postoperatively ($p = 0.04$; OR - 1.9). The area under the receiver operating curve (AUC) was higher in MELD score compared to Child-Pugh for the analysed outcomes, demonstrating the highest sensitivity 83% and specificity 53% for hyperbilirubinemia. Moreover, MELD score showed positive correlation with length of hospital stay ($r = 0.3$; $p = 0.04$).

Conclusions. In elective liver resection surgery patients the MELD score is better predictor for postoperative hyperbilirubinemia, as well as for length of hospital stay, compared to Child-Pugh score.