The ALPPS futility risk score

A guidance tool to avoid futility in ALPPS

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Objective: The Consensus conference in Hamburg triggered the need to integrate established and new risk factors for in-hospital and 3-month mortality. The proposed project does not address indication finding and oncological outcome.

Background: Any medical treatment, including surgical procedures, is only justified if it does not exceed a certain futility threshold. The introduction of ALPPS has created debates about its safety reporting high complication rates and mortality in some series. Single risk factors have been identified, but an easy applicable prediction score to estimate the individual risk of a patient before the procedure and before stage II is lacking.

Methods: Using the International ALPPS Registry a risk analysis for futile outcome (defined as in-hospital and 3- month mortality) will be performed. Previously described risk factors, e.g. age>60, blood transfusion, operation duration>5h, MELD and Bilirubin will be re-analyzed and potential new factors identified. A futility risk formula will be computed to predict the likelihood of mortality and to create risk categories (1-5). This formula is strongly dependent on a good discriminatory ability of the distinct contributors (*c*-statistic ≥ 0.7) allowing a meaningful clinical decision making. In addition, we want to create a clinicopathological nomogram for predicting futility.

Conclusions: ALPPS offers patients with advanced liver tumor load a chance of curative resection. However, these patients are in strong need of precise risk stratification before the procedure and subsequently at stage II to avoid futile outcome. Looking on single risk factors may be helpful in some situations, but does not represent the overall picture. The ALPPS futility risk score will provide an accurate, easy applicable and clinically highly relevant tool to predict in-hospital and 3-month mortality.