

A risk score to avoid adverse perioperative outcomes in ALPPS for CRLM

Pim Olthof, Thomas van Gulik, Hauke Lang, Eduardo de Santibanes, Karl Oldhafer

Academic Medical Center, Amsterdam, The Netherlands

Background:

The relatively frequent adverse postoperative outcomes remains the primary critique to the ALPPS technique. Recently an ALPPS risk score was developed and externally validated in order to avoid a 'futile' stage one or two of ALPPS. However, this risk score was developed in the heterogeneous cohort of patients with all diagnoses including CRLM besides diagnosis often considered a contra-indication for ALPPS such as perihilar cholangiocarcinoma. In this risk score these highest risk patients dominate the risk score, demonstrated by the high odds ratio of 3.8 for biliary tumors. We hypothesize this risk score does not allow optimal stratification of the majority of ALPPS patients that suffer from CRLM, since risk factors in these patients might be tampered by the highest risk biliary patients.

Objectives:

Therefore our objective of this study is to define a risk score to avoid adverse outcomes for CRLM ALPPS patients for both stage one and stage two. The risk score can help in selecting patients for ALPPS and might help to aid the clinician in delaying stage two of ALPPS in order to avoid adverse outcomes. With the more heterogeneous CRLM-only ALPPS cohort, we feel this risk score will better aid clinicians in daily clinical practice.

Methods:

All cases entered into the ALPPS registry for CRLM will be included in the registry. Adverse outcomes will be defined as postoperative mortality or severe postoperative morbidity as defined by the Clavien-Dindo classification. A multivariable logistic regression analyses will be performed in order to identify the risk factors for adverse outcomes after stage one or two individually. The generated odds ratios will be used in order to establish a risk score the predictive the outcomes. The internal predictive value will be determined. External validation will be performed when a sufficient number of cases outside of the registry can be generated with sufficient quality of data, otherwise an internal bootstrap validation will be performed. In addition of course we will welcome anyone will to (dis)validate the model.

Impact of the findings:

The implication of this project might be that the risk score can be applied to clinical practice for surgeons that use ALPPS in daily practice, which is usually for CRLM. A risk score generated in only CRLM and designed for only CRLM will lead to the best patient selection.