

Cardiac assessment in patients undergoing liver transplantation: Meta-analysis

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Introduction: Orthotopic liver transplantation (OLT) is the second most common transplant. Coronary artery disease (CAD) prevalence in patients with end-stage liver disease is equal or greater than the normal population. CAD leads to increase morbidity and mortality post-OLT. Routine evaluation involves clinical risk factors, and EKG, dobutamine echocardiography stress test (DSE), SPECT, CT angiography (CTCAG) and cardiac catheterization indicated for positive test. Current ACC/AHA 2012 guidelines are unspecific and outline clinical evaluation, risk stratification and investigative tests as class III indication. Therefore, we aimed to review those actual available diagnostic tests and its predictive value for CAD in patients undergoing OLT.

Methods: We systematically searched PubMed, EMBASE, and Cochrane up to January 2013. The outcomes studied were predictive value, sensitivity and specificity for CAD detection as well as mortality by using clinical risk factors and noninvasive test assess patients undergoing OLT.

Results: Hypertension, advanced age, hyperlipidemia, diabetes (DM), obesity, typical anginal symptoms, history of CAD, stroke and CHF are the risk factors most associated to CAD. DM has been suggested to be the most predictive risk factor in patients over 50 years old to increase approximately twice the chance for cardiovascular event. Abnormal DSE in the presence of wall motion abnormalities only, is associated with a specificity and negative predictive value (NPV) close to 100%. DSE is a good predictor of cardiac events for patients with CAD or high risk but not for those with low to moderate risk of cardiac disease. SPECT presents sensitivity and NPV close to 100%, but specificity of 15-61%. Reversible defect are associated with higher incidence of cardiac and infection complications and with inferior but not significant survival in comparison with patients with normal or fixed defect. CTCAG is an alternative to patients ineligible to DES or SPECT and presents with better sensitivity by detecting extra 11% of those patients with other negative test. For the last, EKG with QT interval greater or equal to 990 msec is a strong predictor of intra-operative and post-OLT cardiac.

Conclusion: Actual methods to assess CAD are good predictors of patients free of disease, and positive results might require further investigation to evaluate real disease and predict mortality. Nevertheless clinical trials comparing all those tests at the same time would elucidate the best predictive value, sensitivity and specificity.

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