Top Ten Things To Know
Cardiac Disease Evaluation and Management Among Kidney and Liver Transplantation Candidates

1. Cardiovascular disease is a major cause of morbidity and mortality for those with end-stage non-cardiac organ failure before and after transplantation.

2. Approximately 17,700 kidney (including 828 kidney-pancreas) and 6000 liver transplants were done in 2010. During that same year there were 85,000 people on the waiting list for a kidney transplant and 16,000 for a liver transplant.

3. The age of transplant candidates is increasing. In 1991 28.7% of kidney transplant candidates were ≥ 50 years of age; in 1911 62% were ≥ 50 years of age. For liver transplants 77% are ≥ 50 years of age.

4. Unique characteristics of cardiac disease in end-organ failure transplant candidates require additional cardiac evaluation considerations before non-cardiac surgery. For example, acute and chronic ischemia can present differently. Chest pain is often not reported, while shortness of breath may be reported more often. Absence of cardiac symptoms could have a different predictive value in transplant candidates. Because of the timeline for the transplant process, the timing of cardiac evaluation must include short- and long-term perspectives.

5. Existing guidelines may not always be applicable in transplantation candidates. Recent studies demonstrate the varied practices currently employed nationally to evaluate patients for kidney transplantation. These include screening methods, surveillance policies, frequency of cardiac evaluation, race-related variations, and the evaluation of the asymptomatic kidney transplantation candidate.

6. The scope of this paper is limited to the evaluation of cardiac disease in kidney and liver transplantation candidates.

7. Non-invasive screening for CAD (coronary artery disease) has imperfect sensitivity and specificity for detecting CAD in liver and kidney failure patients. Additionally, the findings are not consistently associated with survival.

8. Large clinical trials in patients with chronic kidney and liver disease are needed to determine the efficacy and best myocardial revascularization methods for these patients.

9. Currently the evidence is inconclusive related to routine screening in asymptomatic transplantation candidates.

10. Evidence is needed to inform cardiac risk assessment in the pre-transplantation setting and to maximize the management of risk factors during the peri-transplant timeframe. This paper offers suggestions for future clinical trials to address these areas in kidney and liver transplantation candidates.


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