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Appraising cardiac dysfunction in liver transplantation: An ongoing challenge

End stage liver disease (ESLD) is a multi-system disease that complexly and mutually interacts with other body organs. The heart is one of the organs most adversely affected by liver disease both directly and indirectly. Cardiac dysfunction in the setting of cirrhosis may contribute to mortality as high as 50% post liver transplantation. The spectrum of heart diseases associated with liver cirrhosis includes 3 major groups: (1) Underlying heart disease aggravated by cirrhosis, (2) Heart disease that is caused by a pathologic process that concomitantly affects the heart and the liver and (3) Cirrhosis-associated cardiac disease, which may be vascular, myocardial or pericardial. Liver transplantation while considering the definitive treatment of patients with ESLD, can independently contribute to further deterioration of pre-existing cirrhosis-associated cardiac dysfunction. These adverse effects occur as a result of acute changes in loading conditions and the liberation of inflammatory cytokines and other mediators during graft reperfusion. Furthermore, following liver transplantation there is an increased risk of adverse cardiac events associated with chronic immunosuppressive therapy. Thus, such patients require a thorough cardiac evaluation prior to being deemed acceptable liver transplant candidates. A thorough cardiac evaluation of liver transplant candidates is a challenging task, however. Altered cardiac response to stress, the heterogeneity of cardiac disease in liver transplant candidates and the paucity of well-designed studies investigating preoperative cardiac testing, all explained the current lack of agreement on a single best screening strategy to optimize perioperative and postoperative outcomes. This talk discusses the following: Profiles of cardiac dysfunction in ESLD, short and long term cardiac dysfunction associated with liver transplantation and the preoperative evaluation of liver transplant candidates in light of the current evidence, appraising its limitations. Also, this talk proposes avenues for future investigation of cardiac function in liver transplant candidates.

Biography

Ahmed Zaky is currently an Associate Professor at the Department of Anesthesiology and Perioperative Medicine at the University of Alabama at Birmingham. He has completed 2 residencies in Anesthesiology in Egypt and at the University of Miami and also he has completed 3 Fellowships in Multi-organ Transplant, Critical Care and Cardiac Anesthesiology from the University of Miami, Johns Hopkins University and the Cleveland Clinic, respectively. Further, he has completed his Master's degree in Public Health from the University of Washington, Seattle. He has published over 30 peer reviewed publications and numerous book chapters on the appraisal of cardiac dysfunction in critically ill patients. He is also a funded Investigator and Co-Investigator on several grants that target interventions to early detect and treat cardiac dysfunction in animals and in humans exposed to toxic inhalants. In 2015, he has received the UAB Award for Faculty Academic Achievement to study acute kidney injury post cardiopulmonary bypass.

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