

**Tricuspid Valve Regurgitation after Orthotopic Heart Transplantation – Prevalence and Etiology**

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*Background:* Tricuspid valve regurgitation (TR) after orthotopic heart transplantation (OHT) is common and has been linked to various preoperative, intraoperative and postoperative variables. The aims of this study were to determine the short and long term prevalence of TR after OHT, to examine the correlation between its development and the above mentioned variables and to determine its outcome. *Methods:* All 140 OHT patients who were followed-up at the heart transplant clinic at the Sheba Medical Center between 1991 and 2008 for a minimal period of 12 months were divided into those with no TR/mild TR and those with at least mild-moderate TR. The average follow up period was  $8\pm 4.9$  years. The two groups were compared regarding preoperative hemodynamic variables, surgical technique (biatrial vs bicaval anastomosis), number of endomyocardial biopsies (EMBs) and acute cellular rejections (defined as ISHLT grade 2 or higher), incidence of graft vasculopathy and right heart failure and clinical outcome. *Results:* The prevalence of significant (at least mild-moderate) TR was 30.2%, 10.8%, 9%, and 12.1% - immediately after OHT, at 3 months, at 1 year and at the end of the follow-up, respectively. Pretransplant high pulmonary vascular resistance and high mean pulmonary arterial pressure were found to be significantly correlated with the development of early TR ( $p<0.02$ ). The development of late TR was found to be significantly correlated with a higher total number of EMBs ( $p<0.02$ ), the biatrial surgical technique ( $p<0.04$ ), and the presence of graft vasculopathy ( $p<0.001$ ). No correlation was found between TR and the number of acute graft rejections. TR development was found to be correlated with symptoms of right heart failure and with need for tricuspid valve surgery, but not with mortality. *Conclusions:* The incidence of TR after OHT may be reduced in part by avoiding the biatrial anastomosis technique during surgery and reducing the number of EMBs to an absolute minimum.