(1207)

Strategy for Pre- and Post-Transplant Management of Pulmonary Nontuberculous Mycobacterial Infection

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Purpose: No standard procedures are available for waiting-list registration and pre-transplant treatment for transplant candidates with nontuberculous mycobacteria (NTM) infection. We hypothesized that appropriate pre-transplant treatment is associated with favorable outcomes after lung transplantation (LTx) and allows successful postoperative recovery in terms of decreased risk of *de novo* NTM infection after transplantation.

Methods: A retrospective chart review was conducted of a prospective database of 261 patients undergoing LTx since 2008 (living-donor LTx: 103, cadaveric LTx: 157, hybrid LTx: 1). According to our institutional policy, a negative sputum culture and no active infection on chest radiographs were required for candidate registration on the waiting list. Relevant data were extracted from the medical records.

Results: Eight patients (3.1%) were diagnosed with NTM infection before LTx and thirteen patients (5.0%), after LTx. In two of the eight patients, complete cure of preoperative NTM infection was attained at 18 and 21 years before LTx, respectively. The remaining six patients had pulmonary complications after hematopoietic stem cell transplantation (HSCT); three of the six patients had severe respiratory failure and urgent living-donor LTx was performed within six months after NTM infection. All eight patients are currently alive without clinical findings of NTM infection. Among thirteen patients with post-transplant NTM infection, 11 received cadaveric LTx. Eight of the thirteen patients had chronic lung allograft dysfunction (CLAD), though it was unclear whether NTM infection was a cause or result; four patients had received or registered for re-LTx. Subsequently, six patients died and only one is alive and free from NTM infection and CLAD.

Conclusion: Patients with pulmonary complications after HSCT may have higher risk of NTM infection. Pre-transplant treatment for NTM infection is associated with favorable outcomes after LTx. Postoperative NTM infection is possibly related to CLAD and difficult to manage; therefore, close follow-up is mandatory.

(1208)

Safety and Effectiveness of Low-Dose Cytomegalovirus Valganciclovir Prophylaxis in CMV Seropositive Lung Transplant Recipients

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Purpose: We executed a universal prophylactic strategy in lung transplant (LTx) recipients to prevent CMV infections. All patients received valganciclovir (VGCV) prophylaxis with biweekly blood sample monitoring to detect CMV. Patients were treated with conventional triple-drug immunosuppression including mycophenolic acid, without induction. Retrospective analysis was performed to assess the effectiveness and safety of this protocol.

Methods: We included 166 adult LTx patients (total 174 LTxs) operated between 2004-2016, with the median follow up of 7.32 years. Our CPG for D+/R- recipients and for recipients with cystic fibrosis included 900mg VGCV daily for 12 months, and for R+ patients a low-dose 450mg VGCV daily for 6 months, starting within first week after LTx. The prophylactic dosage was adjusted based on renal function. R+ groups were grouped together due to the low-dose protocol.

Results: Five patients died before the completion of the prophylaxis. During prophylaxis, the overall incidence of CMV infection was 7.1% (12/169), and that of CMV disease was 2.3% (4/169). D+/R- recipients had 10-fold risk of CMV infection compared to R+ recipients (5/148 vs. 7/21, p<0.0005). In 10.0% (17/169) of the recipients, the prophylaxis was prematurely ceased due to leukopenia. There was no statistically significant difference in the prevalence of leukopenia between R+ and D+/R- groups (54.9% vs. 76.2%, p=0.06). In 65,4% of R+ recipients, VGCV prophylaxis was prolonged after 6 months with mean duration of 297±72 days, and in 29.6 % of R+ recipients (42/142) the daily dosage was increased to 900mg. However, the prolongation of VGCV prophylaxis in R+ recipients failed to affect the activation of CMV infection or disease after discontinuation of the prophylaxis (6.1% vs 10.1%, p=0.52). Only one patient (D+/R-) developed ganciclovir resistance. At 5 years, the incidence of CLAD was 57.1% in D+/R- recipients compared to 37.3% in R+ recipients (p=0.07). However, there was no difference in the overall patient survival between groups (73.9% vs. 71.4%, p=0.87).

Conclusion: The low-dose VGCV CMV prophylaxis is safe and efficient in CMV seropositive recipients.

(1209)

Altered Lipid Metabolism in the Follow Up of Cystic Fibrosis Lung Transplant Patients

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Purpose: This study is aimed at characterizing lipid metabolism alteration in Cystic Fibrosis (CF) patients before and after lung transplant (LuTX), in association with pharmacological therapies, dietary patterns and clinical features, at the aim of elucidating its role in LuTX rejection versus graft tolerance.

In spite of reduced body weight, among CF comorbidities, plasma hypertriglyceridemia and low HDL, associated with ectopic lipid accumulation including the airways, liver steatosis and CF related diabetes are reported. An altered ability to oxidize lipids for energy requests was recently suggested in these patients and a high ratio between fat mass and lean mass correlates with clinical worsening, such as reduced FEV and recurrent infections. LuTX causes an increase in fat trunk; it is per se a cause of diabetes insurgence, partially dependent on immunosuppressive therapy. Both reduced and increased weight are considered in the prognosis of rejection and pharmacological reduction of lipid synthesis, by means of statins or activation lipid oxidation by glitazones, may implement survival in LuTX patients. Leptin and adiponectin ratio is altered in CF and in LuTX rejecting patients and CF LuTx exhibit a significantly higher risk to develop hyperlipidemia than non CF. The hypothesis of this study is that CF dyslipidemia and altered ability to use lipids for energy requirement can negatively impact on LuTX, worsening the graft implantation related comorbidities

Methods: The cohort includes adults CF in list for LuTX. Evaluations are performed either before and after LuTX (up to 6 months post). Lipidomic profile is obtained by untargeted LC-MS analyses from plasma, plasma derived microvesicles, explanted lungs and surveillance transbronchial biopsies. Transcriptional profile of lipid metabolism related genes is obtained in lung biopsies by RT-PCR. Lipid metabolism related hormones are evaluated by Luminex multiplex assays from patients' plasma. Clinical biochemistry, lung functional analyses, and nutritional evaluation are routinely performed.

Endpoints: We aim at identifying a lipid metabolism derangement in association with CF LuTX adverse prognosis. The study will provide evidence on the importance of introducing novel nutritional and pharmacological intervention in the follow up of these patients.