

European Respiratory Society Annual Congress 2013

Abstract Number: 2349

Publication Number: P2677

Abstract Group: 8.2. Transplantation

Keyword 1: Animal models **Keyword 2:** Epithelial cell **Keyword 3:** Immunosuppression

Title: Side effects of tacrolimus upon airway epithelial tissue

Mrs. Maristela 17304 Prado e Silva maristelaprado@usp.br ¹, Mrs. Sônia 17305 Soto soninha_soto@hotmail.com ¹, Mrs. Francine 17306 Almeida francinealmeida@usp.br ¹, Mrs. Tatiana 17307 Limonete tati_tatie@yahoo.com.br ¹, Dr. Edwin 17308 Parra erparra20003@yahoo.com.br MD ², Prof. Dr Paulo 17312 Pêgo-Fernandes paulopego@incor.usp.br MD ¹, Prof. Dr Fabio 17314 Jatene fabiojatene@incor.usp.br MD ¹ and Dr. Rogerio 17317 Pazetti rogeriopazetti@yahoo.com.br ¹. ¹ Cardiopneumology, Laboratory of Thoracic Surgery Research, Heart Institute (InCor), Hospital Das Clínicas, Faculdade De Medicina, Universidade De São Paulo, São Paulo, Brazil, 01246-903 and ² Patology, Faculdade De Medicina, Universidade De São Paulo, São Paulo, Brazil, 01246-903 .

Body: In recent years, tacrolimus has become the most widely used immunosuppressive drug by lung transplant patients. However, tacrolimus is not free of side effects upon cells other than those from immunological system. We hypothesized that tacrolimus could affect airway mucociliary clearance, an important defense mechanism of respiratory tract against infectious agents. Twenty Wistar rats were equally divided into two groups to receive either saline solution (Control) or tacrolimus (TAC, 1 mg/kg/day). After 30 days of therapy by gavage, animals were killed and in situ mucociliary transport velocity (MCTV), ciliary beating frequency (CBF) and mucus production were measured. All TAC-treated animals showed a significant decrease in MCTV (1.54 ± 0.42 and 0.79 ± 0.32 mm/min, Control and TAC, respectively; $p < 0.001$) and CBF (14.25 ± 1.29 and 11.99 ± 1.77 Hz, Control and TAC, respectively; $p < 0.001$). However, there was no difference between groups concerning mucus production from airway goblet cells (5.48 ± 1.76 and 5.57 ± 1.14 %, Control and TAC, respectively; $p > 0.05$). These data show that TAC plays an important role on the impairment of the mucociliary clearance which can be related with the high level of respiratory infections observed between 1 and 12 month after lung transplantation. This study was support by Sao Paulo Research Foundation-Fapesp.