Optimal Maintenance Immunosuppression in Lung Transplant Recipients

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Background
- Median survival of lung transplant recipients is lower than other solid organ transplants at slightly over 6 years; with acute and chronic allograft rejection significantly limiting long-term survival.1,2 In an effort to prevent the development of both acute and chronic rejection, immunosuppressive therapy is utilized to prolong graft and patient survival as much as possible. Unfortunately, sparse literature exists to define the optimal maintenance immunosuppression regimen for lung transplant recipients. Currently there are no immunosuppressive agents specifically approved by the U.S. Food and Drug Administration (FDA) for use post-lung transplantation. Maintenance immunosuppression following lung transplantation is largely based off of clinical experience and case reports that do not define a single optimal regimen.1 Conventional maintenance immunosuppressive therapy consists of a calcineurin inhibitor, a nucleotide blocking agent, and a corticosteroid.1 The specific protocol for maintenance immunosuppression post-lung transplant varies from center to center.

Methods
- Single-center, retrospective, self-controlled analysis approved by the Institutional Review Board.
- Retrospective chart review of lung transplant recipients at Jewish Hospital
- All tacrolimus troughs for each patient were analyzed over the first year post-transplant.
- Each patient served as their own control as median trough levels over the first 3 months post-transplant were compared to median trough levels over months 4-12 post-transplant on rates of biopsy proven acute rejection
- The study time frame was January 2010 through December 2015.

Outcomes

Primary Outcome
- Rate of biopsy proven acute rejection 12 months post-transplant

Demographics

| Patients | 25 |
|----------------|
| Males - n (%) | 18 (76%) |
| Females - n (%) | 7 (33%) |
| Age – mean (SD) | 58 (12) |
| Operation – n (%) |  |
| Bilateral | 20 (74%) |
| Left | 5 (19%) |
| Right | 2 (7%) |

Tacrolimus Troughs

- First 90 days
  - 10.5 μg/L
  - 95% CI 10.1, 10.9
- After 90 days
  - 9.5 μg/L
  - P < 0.0001
  - 95% CI 9.1, 9.9

Secondary Outcomes
- Rate of bronchiolitis obliterans syndrome (BOS)
- Rate of cytomegalovirus (CMV) infection
- Rate of non-CMV infection
- Mortality

Results

- Rejection grade
  - Mean tacrolimus level - μg/L (95% CI)
  - 0: 9.9 (6.7, 11.1)
  - 1: 11.3 (9.7, 12.8)
  - 2: 10.8 (7.4, 14.2)
- P-value: 0.31

BOS

- 6 months
  - 14 months
  - 24 months
  - 37 months

References


Disclosure

Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation.