Donor Derived Mycobacterium tuberculosis Infection after Solid-Organ Transplantation: A Comprehensive Review

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Abstract

Background: Mycobacterium tuberculosis may be transmitted via the allograft to cause a mortal and potentially fatal infection after solid organ transplantation (SOT).

Objective: We reviewed all reported cases of donor-derived tuberculosis (DDTB) to provide an update on its epidemiology, clinical course, and outcome after SOT.

Methods: MEDLINE, OVID, and EMBASE were reviewed from its inception and December 2016. We retrieved all articles expressing words donor-derived infection, tuberculosis and solid organ transplant or transplantation.

Results: We retrieved 36 cases of proven (n=17), probable (n=6) and possible (n=13) DDTB. All patients were male (21/35, 60%) with median age of 48 (range 23-88) years. Median time to clinical presentation was 2.7 months (range, 0.2-29). The most common donor risk factor was residence in a TB endemic area (15/28, 46.4%). Fever was the most frequent presenting clinical feature (20/33, 60.6%). Most EPTB (9 vs. 1) and DTB (11 vs. 2) cases occurred in recipients of organs transplanted at a single site outside the respiratory system alone, including the larynx, lung or pleura.

Discussion

- **Results:**
  - Fever was the most frequent presenting clinical feature (20/33, 60.6%).
  - There was common involvement of the transplanted allograft -- PTB is more frequent among lung recipients, while EPTB is more common among non-lung SOT recipients.
  - The diagnosis of DDTB in one recipient should prompt detailed evaluation of all recipients from the same donor.

- **Conclusions:**
  - DDTB is an uncommon event, but is associated with considerable morbidity and a high attributable mortality.
  - It must be considered in any recipient who becomes ill, often with fever and allograft infection, in the early post-transplant period. Pulmonary TB should be entertained among lung recipients in the early post-transplant period.

REFERENCES

- De Rougemont C, Lumbroso E et al ESMID 2016; 4th Suppl 7: 10-13