

Unusual manifestations of mycobacterial infections in heart transplant recipients

Kalp nakli alıcılarında mikobakteriyel enfeksiyonların sıra dışı tezahürleri

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Dear Editor,

I wish to provide some contributions to the mycobacterium infections following heart transplantation concerning a recent review article that was published in your journal. In this related paper, the author Shi-Min Yuan reported his study about the mycobacterial infections in heart transplantation recipients.^[1] It was clear from his paper that he had concentrated mostly on the pulmonary and gastrointestinal involvements but omitted to describe the diverse and exceptional sites of mycobacterial infections. Although they are relatively rare, these unsuspected and elusive involvements may be the initial manifestations of a disseminated infection. It is worth to mention these details, as the awareness of these occult signs would encourage the early detection of the disease and the rapid initialization of the medical treatment.

The incidence of *Mycobacterium tuberculosis* infections among heart transplant recipients is 1%-1.5%.^[2] Although the large series of mycobacterial infections in transplant recipients reveal a dominance in pulmonary involvement (51%), disseminated infections constitute the secondary majority (33%).^[2] The remainder 16% of the whole cases are the “extra-pulmonary” infections that constitute the other scarce foci that we want to underline.

In the related article, the gastrointestinal and skin involvements of the mycobacterial infections constitute most of the “extra-pulmonary” group that were well described in details supported with graphical demonstrations.^[1] However, tuberculosis

may also affect other organs and systems.^[2] As an example, *Mycobacterium tuberculosis* infection may involve the skeletal system in transplant recipients.^[2] Ozisik et al.^[3] reported the first case of Pott’s disease occurring after heart transplantation. Report of this unusual case of vertebral involvement of tuberculosis reminded physicians of the importance of establishing a diagnosis for lumbalgia in heart transplant patients. Despite the bone involvement (Pott’s disease) is extremely rare, occurring only in 1% of the patients with tuberculosis, it should always be considered in transplant patients.^[3]

Likewise, eye involvement with *Mycobacterium tuberculosis* is rare in heart transplant recipients; however, ocular lesions may be the early precursor of a disseminated disease.^[4] Additionally, *Mycobacterium tuberculosis* infection may also affect the central nervous system, genitourinary tract, the larynx as well as the thyroid gland, lymph nodes, and adrenal glands.^[2]

We hope this extra information contributes to this well-written review with a different point of vision.

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Author's Reply

Dear Editor-in-Chief,

This is in reply to Başbuğ and Özışık who raised a question of completeness of literature collection in terms of infection locations with reference to my publication “Mycobacterial infections in heart transplant recipients” in a recent issue of Turk Gogus Kalp Dama.^[1] As I have shown in my article,^[1] infection locations were not included in the retrieval policies as the study laid in management of the disease instead of the locations, as many large-scale retrospective trials did.^[2] Mycobacterium tuberculosis infections developed in 17 heart transplant recipients out of the 511 solid organ transplant recipients. The infection sites of each kind of organ transplant were not clearly enlisted.^[3] In the rebuttal of Başbuğ and Özışık,^[4] they cited three relevant references.^[5-7] Their Reference 2^[5] was a comprehensive review article that did not present substantial information for my systematic review of “mycobacterial infections in heart transplant recipients”. Their statement of infection locations of “skeletal system in transplant recipients” were apparently derived from page 582, where “transplant recipients” were solid organ transplant recipients but not necessarily those of heart transplant. In many articles of mycobacterial infections of solid organ transplant recipients, the exact infection locations of heart transplant recipients were not described in detail,^[2,3] and obviously the stated infection sites in these articles were not useful to my systematic review article.^[1] In their Reference 4,^[7] the patient

population was not those undergoing heart transplant but acquired immune deficiency syndrome patients, and the publication time was beyond that of my retrieval policy. The real supplements to my review article were two rare and one “usual” locations of infection, which were thoracic vertebra,^[6] eye^[8] and digestive tract,^[9] including the Reference 3^[6] cited by Başbuğ and Özışık in the rebuttal (Table 1). However, these articles were not generated with the search terms of my retrieval policies, indicating the deficiencies of the key words of these publications. Moreover, the incidence of this rare disease could be underestimated as the positiveness of the detection of mycobacterial infections could be closely related to a series of factors including sampling site, sample size, and diagnostic methods.^[1,2] At any rate, all organs (lung, urologic tract, peritoneum, pleura, intestine, joint, liver, larynx, testis, spleen, mediastinum, lymph nodes, thyroid, pericardium, bone marrow and brain;^[2] skin, muscle, osteoarticular system, central nervous system, genitourinary tract, lymph nodes, adrenal gland, thyroid gland, and eye^[5]) could be infected by mycobacteria in immunocompromised patients, no matter they are heart, other solid organ or bone marrow transplant recipients. However, the rare infection locations are really rarely described in heart transplant recipients. Therefore, the important thing is not the involved organ by the pathogens but instead the mortality related to the infection. The emphasis has to be placed on early diagnosis, early treatment, and prognosis.

Table 1. Supplements to mycobacterial infections in heart transplant recipients

Author	Sex/Age	Latency	Pathogen	Infection site	Diagnostic method	Treatment	Outcome
Ozisik et al. ^[6]	M/40	0.5	<i>Mycobacterium tuberculosis</i>	Thoracic vertebrae	Magnetic resonance imaging, bone biopsy	Vertebral body resection, 4-drug regimen*18 months	Good
Modi et al. ^[8]	M/66	9	<i>Mycobacterium haemophilum</i>	Eyelid, skin of upper and lower extremities	Cultures of pars plana vitrectomy and skin lesions	4-drug regimen*10 months, immunosuppressive therapy was reduced and granulocyte macrophage-colony stimulating factor was added	Improved
de Lastours et al. ^[9]	M/37	3	<i>Mycobacterium genavense</i>	Duodenum, ileum, colon	Multiple biopsies, molecular diagnosis	4-drug regimen, then modified, totally 18 months	Good

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