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PITFALLS AND ACHIEVEMENTS IN THE MANAGEMENT OF SEVERE MIXED PULMONARY INFECTION IN A HEART TRANSPLANT RECIPIENT

ČORAK L.[1], Džubur F.[1], Glodić G.[1], Hećimović A.[1], Janković Makek M.[1], Krpina K.[1], Ljubičić L.[1], Mihelčić Korte D.[1], Moćan A.[1], Pavliša G.[1], Puretić H.[1], Samaržija M.[1], Vukić Dugac A.[1], Žuljević E.[1]

[1] University Hospital Center Zagreb, Zagreb, Croatia
Department for Respiratory Diseases Jordanovac

Objective: 68-year-old male patient received a heart transplant in October 2016. In 2017 he was successfully treated for right upper lung aspergillosis. During treatment he developed a moderate renal insufficiency and normocytic anemia. In June 2018 he was admitted once more due to fever, cough, increased CRP level (125 mg/L) and anemia (Hb 92 g/L).

At the time of admission CT scan showed newly formed infiltrates in the right middle and lower lung lobe. Plasma beta-D-glucan was positive, and microbiological cultures grew Aspergillus fumigatus and Enteroccocus faecalis. Molecular testing for Pneumocystis jirovecii and Mycobacterium tuberculosis (MTB) were negative. Viral co-infections were excluded. At admission patient was put on antifungal and broad spectrum antibiotic. Levels of tacrolimus were monitored due to interactions with voriconazole to achieve recommended plasma levels. He was discharged with voriconazole therapy with partial radiological and clinical improvement.
In August 2018 CT scan showed progression and CRP level was high (384 mg/L). He was admitted and put on dual antifungal (caspofungin + voriconazole) and antibiotic (piperacillin/tazobactam + ciprofloxacin) therapy. Microbiological and molecular investigations were negative for MTB, P. jirovecii, and Nocardia, but low titers of Aspergillus spp and Candida glabrata were cultured from the sputum. Histology finding of the transthoracic biopsy showed only elements of nonspecific, chronic active inflammation of severe intensity. Extensive exploration (including microbiological, molecular, cytology and histology findings) didn’t reveal exact diagnosis. Radiological

finding further worsened and he developed severe pleurisy pain due to lesion prominence between the ribs. Based on all available data, suspicion of invasive nocardiosis was raised. While continuing the antifungal therapy, meropenem and trimethoprim/sulfamethoxazole were introduced. After managing complications of transient renal function worsening, therapy finally resulted with regressive dynamics of inflammatory markers, radiological finding and clinical improvement. He was discharged with trimethoprim/sulfamethoxazole and voriconazole therapy. Three months later, control CT scan showed complete resolution of infiltrates and improvement of anemia (Hb 127 g/L) with unchanged level of renal insufficiency. Voriconazole was left out, while therapy with trimethoprim/sulfamethoxazole will continue for up to a total of 6-12 months of treatment.

Management of lung infection in immunocompromised patients is often challenging. One has to think of mixed infections and otherwise rare pathogens even in the absence of microbiological confirmation. Treatment is further complicated by drug-drug interactions and co-morbidities.