

# Fungal Infections Complicating Targeted Therapies in Patients with Hematological Malignancies

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Targeted therapies such as monoclonal antibodies with lympholytic action such as Campath and Tumor necrosis factor alpha (TNF- $\alpha$ ) blockade have emerged as useful therapeutic modalities in the treatment of lymphoid malignancies and in stem cell transplantation in the setting of refractory graft-vs-host disease. The profound and sustained immunosuppression associated with these agents results not uncommonly to opportunistic fungal infections. Disruption of granulomas, T-cell dysfunction, the immunosuppressive effects of frequent CMV reactivation (in the case of Campath) play a major pathogenetic role. These infections tend to be severe, frequently are disseminated and associated with high fatality rate. Concomitant immunosuppressive conditions or medications such as systemic corticosteroids and the time to recognition and treatment of the fungal infection appear to influence clinical course and outcome. Moulds and endemic fungi such as histoplasma are the most common mycoses encountered in that setting. Physicians administering and patients receiving such modalities should be aware of the high risk of fungal complications. Close surveillance of high risk populations before and after initiation of targeted therapies is warranted. Safety vigilance and postmarketing surveillance of invasive fungal infections complicating TNF- $\alpha$  blockade as well as other biologic therapies is needed through well-organized prospective patient registries.

## Reference

1. Tsiodras S, Samonis G, Boumpas DT, Kontoyiannis DP. Fungal infections complicating TNF- $\alpha$  blockade therapy: A review of reported cases. Mayo Clinics Proceedings. in press.