The risk of fungal infections increases dramatically in immunocompromised patients and especially in those with profound and protracted neutropenia.

Because of the insensitivity of diagnostic methods and the poor outcomes associated with established infections, empirical antifungal therapy is used for patients with neutropenia who have persistent fever despite the administration of antibacterial agents.

Although conventional amphotericin B has been considered the optimal first-line agent, its status as the preferred treatment has recently been challenged by the results of trials comparing it with lipid formulations of amphotericin B and newer antifungals.

Unfortunately, empirical treatment with conventional amphotericin B is limited by breakthrough fungal infections, acute toxic effects related to the infusion, and dose limiting nephrotoxic reactions. The development of lipid formulations of amphotericin B allows empirical antifungal therapy to be administered with potentially improved efficacy and reduced toxicity.

The antifungal agents used in the clinical trials have different targets and toxic effects. Fluconazole is effective only against certain *Candida* species, whereas itraconazole, amphotericin B and the newer agents echinocandin and voriconazole have increased activity against molds and several resistant *Candida* species. Toxic effects also vary, with echinocandin, triazoles and lipid formulations of amphotericin B having fewer toxic effects than conventional amphotericin B. So given the greater number of options, which antifungal agent is best for empirical antifungal therapy:

The results of a comparative trial evaluating the safety of Liposomal amphotericin B (AmBisome) versus amphotericin B lipid complex (Abelcet) in the empirical treatment of febrile neutropenia suggested that AmBisome at 3mg/kg/day or 5mg/kg/day presents a superior safety profile in comparison with Abelcet at 5mg/kg/day. When voriconazole was compared with AmBisome in empirical antifungal therapy in patients with neutropenia and persistent fever voriconazole failed to meet specified criteria for non inferiority to AmBisome with respect to overall response to empirical therapy.
A recent trial at caspofungin versus liposomal amphotericin B for empirical antifungal therapy of persistently febrile neutropenic patients concluded that caspofungin was as effective as L-AMB for empirical therapy of suspected fungal infection in febrile neutropenic patients. It must be emphasized that the number of high-risk patients in this study was small compared to AmBisome’s previous studies and further information is needed in order to clarify caspofungin and AmBisome’s response to baseline infections.

From the available data it can be concluded that till now L-AMB is the drug of choice for empirical antifungal therapy and that its use may reduce the frequency of breakthrough fungal infections, preserve renal function, and reduce the frequency of acute infusion-related toxic effects.

References