
FUNGAL TOENAIL INFECTIONS IN NEUTROPENIC PATIENTS

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Toenail onychomycosis is characteristically caused by *Candida* and dermatophytes in immunocompetent patients. Less than 1% of onychomycosis is related to *Fusarium*. We have observed at our institution that toenail infections in neutropenic patients with hematologic malignancy can lead to disseminated fungal infections, especially the mold *Fusarium*. We reviewed all positive fungal cultures from nails removed for suspected fungal infection during the time period of 1985 to present at the our center. Cancer diagnosis, stem cell transplant status, duration of neutropenia, imaging of sinuses and lungs, treatment, and outcome were noted.

Sixteen cases met study requirements. Ten infections were secondary to *Fusarium*, four secondary to *Aspergillus*, two to *Trichophyton* and one to *Paecilomyces*. One patient was infected with both *Fusarium* and *Aspergillus*. Dissemination occurred more commonly in patients with prolong neutropenia, a *Fusarium* isolate, and resulted in death more often than non-disseminated cases. The key to treatment is to remove and culture the nail as this practice allows for an accurate diagnosis. In addition, it is important to remove the nail as a foreign body and to eradicate the primary focus of infection. In relation to *Fusarium*, proposed portals of entry for disseminated *Fusarium* infection have included the sinuses, gastrointestinal tract, intravascular catheters and toenails. Previously, few treatment options existed for disseminated *Fusarium* infections. *Fusarium* is relatively resistant to Amphotericin B including lipid formulations, fluconazole, itraconazole and caspofungin. In our experience, the newer generation azoles such as voriconazole are effective in treating disseminated *Fusarium* infections with a lower mortality and more rapid clinical response even when the brain is involved. Regardless of treatment, the longer the duration of neutropenia, the higher the mortality rate.