Prevention of Systemic Mycoses by Reducing Exposure to Fungal Pathogens in Hospitalized and Ambulatory Neutropenic Patients

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This article has been chosen as being particularly suitable for reading and discussion in a Journal Club format. The following questions are posed to stimulate thoughtful critique and exchange of opinions, possibly leading to changes on your unit. Formulate your answers as you read the article.

1. Is this article research based? What is the level of evidence being presented?
2. Based on the risk factors presented, to what extent are the patients we care for at risk for fungal infections? What kind of fungal infections?
3. Name at least two potential sources, in our clinical setting, of fungal contamination.
4. What strategies can be explored to reduce the likelihood of patient exposure to these sources of contamination?
5. What patient education materials are available to reduce patient susceptibility in the home environment?

At the end of the session, take time to recap the discussion and make plans to follow through with suggested strategies.

Purpose/Objectives: To describe sources of fungal contamination that can incite invasive mycoses in hospitalized and ambulatory neutropenic patients and to discuss approaches to reduce exposure to pathogens.

Data Sources: Published articles, books, and brochures.

Data Synthesis: Modifications of patient environments and lifestyles include hand hygiene for patients and healthcare workers, air filtration in hospitals, and reduction in exposure to plants, soil, standing water, and dusty environments. The effectiveness of dietary restrictions is controversial, although avoidance of pepper is recommended. These restrictions should be implemented prior to, during, and following neutropenia.

Conclusions: Mycoses can be hospital or community acquired; however, although guidelines for environmental and lifestyle modifications are well documented for the institutional setting, they are more limited for ambulatory patients.

Implications for Nursing: Nurses have a key role in the early identification of outbreaks of fungal infections, evaluation of hospital and home environments for sources of pathogens, education of patients on preventive measures, and research on neutropenic diets and improved technology to reduce exposure to fungal pathogens.

Key Points . . .

- ➤ Patients with prolonged and profound neutropenia are at risk for fungal infections, which are associated with high mortality and morbidity.
- ➤ Reduction in exposure to fungal pathogens is an important means of preventing mycoses.
- ➤ Hand hygiene, hospital environmental controls, and avoidance of contact with plants and damp, dusty environments can contribute to reduced fungal exposure. Dietary restrictions are controversial.
- ➤ With the increasing trend toward outpatient therapy, greater emphasis is needed on reducing sources of contamination in the home environment.

Invasive mycoses have emerged as a major determinant of mortality and morbidity in neutropenia (Bodey, 1997; Bow, 1998), and their prevention is a priority in optimal care of hospitalized and ambulatory patients (Johnson, Gilmore, Newman, & Stephens, 2000; Manuel & Kibbler, 1998; Philpott-Howard, 1996). Reduction in exposure to fungal pathogens is one approach for decreasing the incidence of

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