

Abstract

Title

Aetiological agents of bacteraemia and fungaemia in patients with neoplastic disease at Cancer Institute Maharagama.

Introduction

Patients with neoplastic disease are immunocompromised either because of cancer or due to its treatment. Therefore they are more prone to get infections. The common microorganisms encountered in cancer patients are bacteria and fungi. Because immunocompromised patients are at risk of life threatening sepsis they require immediate empirical antimicrobial therapy. Empirical therapy ideally should be based on local patterns of aetiology & drug susceptibility. At present there is no published data in this area in Sri Lanka to help clinicians to select empirical antimicrobial therapy.

General objective

To determine aetiological agents of bacteraemia and fungaemia.

Specific objectives

1. To determine aerobic bacteria causing bacteraemia
2. To determine fungi causing fungaemia
3. To describe selected associated factors of bacteraemia and fungaemia
4. To describe the antibiotic and antifungal sensitivity patterns of bacterial and fungal isolates

Method

Study design - Descriptive cross sectional study

Study period - July 2004 to September 2004.

Study population - Diagnosed paediatric or adult cancer patients who required a blood culture due to clinical evidence of infection.

Bacterial cultures and antibiotic susceptibility tests (ABST) were done at Cancer Institute Maharagama. Fungal culture and antifungal sensitivity tests were done at Medical Research Institute. Analysis of results was done by SPSS 13.0 version. Chi-square test of significance was used to test the significance.

Results

Majority of the patients in the study group comprised of adults (61.5%). Leukemia was the most common malignancy (60.8%) in the study population, followed by solid tumours (16.8%) and lymphoma (11.9%). Sixty six (46.2%) patients were neutropenic.

There were 43 blood culture isolates from 41(29%) patients. *Methicillin resistant staphylococcus aureus* (20%) was the most frequently isolated organism, followed by *Coagulase negative staphylococcus* (16.3%), *Pseudomonas* (11.6%) and Coliforms (6.9%). There was only one fungal isolate. (2%). All Gram positive organisms were susceptible to vancomycin. *Pseudomonas* and *Acinetobacter* spp. had high susceptibility rates to a variety of antibiotics. There were no extended spectrum beta lactamase producing organisms.

Conclusion

There were 29% of patients with positive blood cultures. Of these 72% were gram positive bacteria, 26% were gram negative bacteria, and 2% were fungi.

Methicillin resistant staphylococcus aureus (MRSA) was the most common among the gram positive organisms. *Pseudomonas* spp was the commonest isolate among gram negative organisms. This study reveals that leukemia is more frequently observed in the paediatric age group ($p = 0.014$) and bacteraemic episodes are more frequently with leukemia. ($P = 0.034$).