Epidemiological surveillance of systemic fungal infections in childhood cancer patients
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A 6-year prospective surveillance was undertaken at the paediatric oncology unit of University Malaya Medical Center from 1996 to 2001. The aim was to study the epidemiology of systemic fungal infections amongst children with cancer. A total of 40 patients were identified with a mean age of 6.5 years (range 5 months to 13 years). Leukemia was the underlying diagnosis in 29 (72.5%) patients while lymphoma and other solid tumours including aplastic anaemia was the primary disease in 4 (10%) and 7 (17.5%) patients respectively. The majority of patients (65%) developed systemic fungal infections during the induction phase of chemotherapy where all but four were neutropenic. The mean duration of neutropenia prior to the diagnosis of systemic fungal infection was 13 days (range 2–84 days). The types of fungi isolated were Candida spp (31), Aspergillus (4), Fusarium (2) and Mucor (1). Twenty-two patients had Candida species isolated from their blood. Of note was the high incidence of non-albicans Candida with C. parapsilosis, C. tropicalis and C. rugosa seen in 9 (22.5%), 5 (12.5%) and 1 (2.5%) patients respectively. Hepatosplenic candidiasis was radiologically documented in 3 patients. Severe rhinofacioaxillary mucormycosis was seen in one patient who succumbed to this infection. Only eleven patients had in-dwelling central venous catheters but the majority (80%) had had at least 1-week broad of broad spectrum antibiotic therapy prior to developing the fungal infection. There was marked individual variation in treatment but the majority of patients (57.5%) were given conventional iv amphotericin B. Mean duration of therapy was 18 days. There were 12 (30%) deaths related to these infections while 8 patients recovered but subsequently died of their disease or other causes. Fifty percent of patients made a good recovery. This study emphasized the increasing incidence of non-albicans Candida in our unit. Fungal infections should always be sought for in patients with cancer especially during the period of neutropenia following induction therapy and in those receiving prolonged broad-spectrum antibiotic therapy.

INFECTIONS IN THE YOUNG AND ELDERLY

CD4 Lymphocyte count in frail long term care elderly patients with eating difficulties
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Frail long term care elderly patients are prone to recurrent infections. Up to 70% of this population is in risk of undernutrition because of eating difficulties. Concerns arose recently as for the reliability of the current indicators of their nutritional status (albumin, vitamins hemoglobin). Malnutrition, as a contributing factor to immunodeficiency, is difficult to evaluate in frail patients because of the many variables involved (comorbidity, polypharmacy, individual patterns of feeding). The existence of an increasing subgroup of tube-entercally fed (TEF) patients makes possible to compare the orally fed (OF) with similar counterparts. Assuming that nutrition of TEF is optimal we hypothesized that a low CD4 lymphocyte count, could be more prevalent in the OF group.

Thirty-nine orally fed (group A), and 19 TEF (group B) subjects entered this study. CD4 count was determined by flow cytometry. Recorded for each group were also the accepted nutritional markers (albumin, hemoglobin and body mass index (BMI)). Eight patients in group A had a CD4 count of less that 400 while all the patients in group B had CD4 count of over 500 (P<0.03). Nutritional markers were within normal limits with no differences between the groups.

These results confirm our early presumption that a low CD4 lymphocyte count is more prevalent among elderly frail patients with eating difficulties, supporting the view that some of them are in a state of undernutrition that negatively influences their immunodefence.

Efficacy of mupirocin prophylaxis on staphylococcal carriage in nursing home residents
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The efficacy of mupirocin (MUP) in clearing persistent carriage of Staphylococcus aureus was assessed in a randomized, double-blind, placebo-controlled trial. 145 (34%) of 427 patients (pts) from a VA and community-based nursing home (NH) screened for carriage in nares and wounds were S. aureus (+). 127 (88%) pts eligible for the study were enrolled. 64 pts were randomized to MUP and 63 to placebo; nares and wounds were treated twice daily for 14 days. VA pts were significantly younger, more likely to be male, independent in function, have devices, and a recent history of hospitalization or antibiotic treatment (Rx). No difference was noted in comorbidities between the MUP and placebo groups. Pts were cultured and monitored for infection for up to 6 months. 20% pts were follow-ed <3 months, 35% 3–5 months, and 23% ≥6 months. MUP led to microbiologic cure at 14, 30, and 90 days follow-up, p<0.0001. By 6 months, no significant effect of MUP colonization was seen, but the no. of remaining pts was small. Only 5 (8%) pts on MUP Rx failed to achieve microbiologic cure. Of
these failures, 1 pt had low-level MUP resistance (MIC 32 mg/ml) prior to Rx. During or post Rx, 1 pt had low-level (MIC 32 mg/ml) and 3 developed high-level resistance (MIC >500 mg/ml). 12/64 (19%) pts on MUP who initially cleared became recolonized. 8 with their original strain and 2 with new strains by PFGE typing. Seven infections occurred in the placebo group and 3 in the MUP group. p=0.1. MUP was effective in clearing S. aureus carriage for up to 90 days in NH pts. Recolonization generally occurred with the pts original strain. Failure to achieve microbiologic cure at 14 days was associated with MUP resistance. A decline in number of infections was noted when MUP was compared with placebo, but the difference was not significant.

Candida albicans sternal wound infections among elderly veterans: a chronic and recurrent complication of median sternotomy
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Candida albicans (CA) is an uncommon cause of sternal wound infection (SWI). We report on 11 elderly patients (pt) who developed SWI due to CA after undergoing coronary artery bypass grafting (CABG).

Cases were identified by surveillance of pts undergoing CABG from 10/97 to 6/99 at the Veterans Affairs Ann Arbor Healthcare System. The case definition required (1) isolation of CA from purulent drainage; (2) clinical signs of inflammation; (3) absence of other microorganisms or failure to improve after treatment of other organisms; (4) response to antifungal agents.

Mean pt age was 64.8±7 yr; 10/11 were men. Six had sternal osteomyelitis, one had mediastinitis, 4 had deep wound infections. Seven pt had onset of infection within 28 days of CABG, but 4 had onset 48–150 days post-CABG. CA was isolated from wound or deep tissue in all pt; other organisms present including coagulase negative staphylococci (3), Enterococcus faecium (1), and E. faecalis (1).

Infections were characterized by a chronic, indolent course requiring prolonged treatment with an antifungal agent. All pt were treated with fluconazole (FLU) (200–800 mg/day), and one also received amphoteracin B. Six patients had incision and drainage, with or without wire removal, and 3 had sternectomy with placement of a muscle flap. Ten pt with long-term follow-up appeared to be cured after initial therapy (median 6 months), but 3 later relapsed. All responded to re-initiation of antifungal therapy; 2 were cured after additional FLU, the third remains on life-long suppression.

CA is a significant pathogen in both acute and chronic SWI post-CABG. Isolation of CA from cultures in this setting should prompt consideration of antifungal therapy, particularly in pt who fail to respond to brief courses of empiric antibacterial therapy. Optimal management of Candida sternal wound infection is not known, but our experience suggests that long-term azole therapy is usually successful and well tolerated.

Characterization of isolates of Streptococcus agalactiae from invasive tissue infections in elderly diabetic patients
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Type II diabetes mellitus is common in Kuwait. Some diabetic patients suffer invasive tissue infections. Streptococcus agalactiae (Group B Streptococcus) is a relatively frequently isolated pathogen. Previously S. agalactiae was identified by cultural characteristics, (f3-hemolysin, catalase reaction) and demonstration of the group B antigen by latex agglutination. The objective of this study was to determine the relatedness of isolates from diabetic patients and to compare them with a number of vaginal isolates. Twenty four isolates of S. agalactiae were examined for biotype, group antigen, type antigen by micro-agglutination and molecular relatedness by random amplified polymorphic DNA analysis (RAPD). Eighteen isolates were from diabetic patients, including 12 strains from foot infections and 6 from tissue infections of other body sites. Six isolates were from vaginal swabs. The organisms were all confirmed as S. agalactiae by biotyping with the API 20 Step and all carried Lancefield group B antigen. Serotyping showed the presence of several capsular antigens with types III and V predominating. No one serotype was associated with any group of isolates. All the strains were resistant to tetracycline and occasional resistance to other antibiotics was found. RAPD analysis was carried out using Pharmacia 'Ready to Go' beads and the six primers supplied. All the isolates showed differences in their band patterns with one or more of the primers supplied. They were not identical or very similar. No complement was evident.

Objectives: To determine the prognostic criteria of clinically relevant and lethal courses of salmonellosis among the elderly.

Extraintestinal courses of salmonellosis and mortality in elderly patients
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