

Bacterial Infections in Leukemias

The report on bacterial infections in leukemias brings to light an extremely high incidence (86%) of infections in hospitalized leukemic patients having absolute granulocyte count over 1500(1). This is probably because the leukemic patients were kept in general wards along with patients having various infections. Failure to isolate the leukemic patients is not justifiable. It is accepted that sophisticated sterile precautions like "Laminar flow rooms"(2) are beyond our reach but anybody who can afford the expensive treatment of leukemia must be able to afford at least a separate room. Otherwise, the money spent on treatment will ultimately prove to be a waste.

The report makes no mention of the commonly isolated organisms in other patients of the institution. This would have brought out whether the bacterial isolates in leukemic patients were a reflection of the organisms prevailing in the institution or selection of resistant organisms due to antibiotic prophylaxis.

There is no scientific reason for antibiotic prophylaxis in non-leukopenic afebrile leukemic patients. Some authorities recommend prophylactic cotrimoxazole in granulocytopenic children(3). However, even after this, exposing these children to infections in general ward will only lead on to the

selection of resistant organisms.

Since pseudomonas also is a common organism (1-3), it is desirable to select ceftazidime as the preferred third generation cephalosporin. Many authorities add an aminoglycoside also (3) for fear of pseudomonas acquiring resistance.

A. Santhosh Kumar,
*Lecturer, Department of Pediatrics,
Medical College (SAT) Hospital,
Thiruvananthapuram 695011.*

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Reply

Infection in 86% of non granulocytopenic patients in the study group as against the reported rate of 17% is alarming (1). Our hospital building, originally a tuberculosis sanatorium with

only general wards separated into cubicles, is under modification. The only possible isolation, by keeping these children in a separate cubicle at present, is highly insufficient. The study revealing such a high infection rate has given us valid reason for demanding separate rooms urgently for these unfortunate children.

During the study period, pneumonias and meningitis were treated in the same ward in separate cubicles. The pathogens causing pneumonia were *Klebsiella* (36%), *Staph. aureus* (20%), *S. pneumoniae* (6%) and *H. influenzae* (6%) (Sujata *et al.*, unpublished data) while those for meningitis were *H. influenzae* and *N. meningitidis*. From the 6 children undergoing maintenance therapy at home, *Staph. aureus* (3 cases), *Acinetobacter* (2 cases) and *E. coli* (1 case) were isolated. The bacterial associations described in non neutropenic leukemia patients are *Pneumocystis Carinii* pneumonia (PCP) and *H. influenzae* infections (2). Thus it is evident that bacterial isolates in study group are similar to those seen in granulocytopenic patients and is possibly because of the qualitative defects in granulocytes inherent in leukemic children augmented by drug therapy (1).

Prior to the study period in our hospital there were increased deaths in children with leukemia, presumably due to PCP. Unlike most infections in cancer patients, PCP occurs in remission phase in non granulocytopenic and in those not

receiving prophylactic cotrimoxazole (CTZ) (2). The absence of PCP and *H. influenzae* infections in the study group may be due to CTZ prophylaxis. The beneficial effects of this prophylaxis and the possible risk of selecting resistant strains can only be commented after controlled studies in our set up.

In our set up, pseudomonas is only fourth among the pathogens and ceftazidime is effective against this organism only. Hence, though may authorities recommend ceftazidime as the preferred third generation cephalosporins along with aminoglycosides, the empirical antibiotic combinations of our choice are cefotaxime or ciprofloxacin plus cloxacillin.

Pradeep Mathew,

Marian Medical Center,

Palai, Kottayam,

S. Sushama Bai,

Associate Professor,

Department of Pediatrics,

Institute of Child Health, Medical College,

Kottayam 686 036.

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