

Table 1

	Blood	Urine	Sputum	Other	Total(%)
Gram-positive	49	8	11	33	101 (45.4)
Gram-negative	43	25	12	20	100 (44.9)
Fungi	6	–	9	7	22 (9.7)
Total	98	33	32	60	223 (100)

**Conclusions:** Fever constitutes a frequent complication in neutropenic patients with haematological malignancies and in approximately 60% of febrile episodes a causative organism is identified. An equal number of infections are caused by Gram-positive and Gram-negative organisms. In more than half of the cases the anti-fungal treatment is given empirically. The infection-attributed mortality is 9.1%.

## 77

**Microbiological epidemiology of infections in cancer patients treated in ICU**

Maria Kalaitzopoulou, Dimitrios Spanogiannis, Eleni Kakasi, Eirini Karra, Kyriazis Chatzinikolaou, Eirini Kosmidou. *St Paul General Hospital, Laboratory of Microbiology, ICU, Thessaloniki, Greece*

**Background:** Patients treated in ICU often suffer from malignancies. Infections are among the most frequent complications occurring in cancer patients undergoing antineoplastic chemo- or immunotherapy.

**Objectives:** The aim of this study was to investigate the prevalence of ICU-acquired infections these patients suffer from after a surgical operation or an immunosuppressive treatment.

**Methods:** Twenty-four patients suffering from malignancies (Ca, lymphomas, multiple myeloma, etc.) were admitted to the ICU during the last two years. Clinical samples (blood, urine, central venous catheter, drainage, bronchial lavage etc.) were obtained from 13 of them. Specimens were inoculated and incubated according to standard bacteriological methods. Identification and susceptibility testing of culture isolates was performed by VITEK semi-automatic system in accordance with the CLSI guidelines.

**Results:** Pathogens were isolated in 11 of 13 patients (84.6%). One to five pathogens were isolated in each patient. 13 of them were Gram-positive bacteria (25%), 8 were Gram-negative bacteria (32%) and 4 were *Candida spp* (16%). Pathogens detected are presented in the table:

Table 1. Microbiological epidemiology of infections in cancer patients treated in ICU

Gram-positive	Gram-negative	Candida
<i>S. simulans</i>	<i>K. pneumoniae</i>	<i>C. glabrata</i>
<i>S. auricularis</i>	<i>E. coli</i>	<i>C. albicans</i>
<i>S. epidermidis</i>	<i>Ps. aeruginosa</i>	
<i>S. hominis</i>	<i>A. calcoaceticus</i>	
<i>E. faecalis</i>	<i>P. mirabilis</i>	
<i>E. faecium</i>		
<i>C. xerosis</i>		
<i>S. pneumoniae</i>		

*Staphylococci* isolated were all coagulase negative and oxacillin resistant. Strains of *E. coli* and *K. pneumoniae* isolated revealed to produce extended-spectrum  $\beta$ -lactamases (ESBLs) whereas *Ps. aeruginosa* produced metallo- $\beta$ -lactamases (MBLs). Furthermore all *Acinetobacter* isolated were multiresistant.

**Conclusions:** Most common pathogens were Gram-positive bacteria, especially coagulase negative *staphylococci*, followed by *enterobacteriaceae*. Most prevalent were bloodstream infections, local CVC-related infections and pneumonias whereas less prevalent were urinary tract infections. Exposure of immunocompromised patients to invasive devices in ICUs, such as multi-lumen central

venous catheters, contributes to increased rate of infections by highly resistant pathogens (ESBL, MBL, oxacillin resistant) and high mortality rate. Our study confirms the essential role of epidemiologic surveillance and infection control.

## 78

**Cutaneous and Mandibular Dual Fungal Infection with *Fusarium* and *Rhizopus* Species, in a Child with AML**

Kiran Belani, Jawhar Rawwas, Dennis Drehnar, Jim Sidman, Timothy Lander, Glen Anderson. *Childrens Hospitals and Clinics of Minnesota, Minneapolis, USA*

**Background and Materials:** Ten year old African male diagnosed with acute myelogenous leukemia (AML), with a favorable biomarker t(8;21) positive, on Childrens Oncology Group protocol AML 0531 receiving ARA-C, Daunorubicin, Mitoxantrone, Etoposide, intrathecal ARA-C, and L- asparaginase.

**Methods and Results:** Bacterial infections during chemotherapy were alpha streptococcal bacteremia, VRE colonisation and *Klebsiella* bacteremia. Three months into therapy the child fell on dirt and sustained minor asymptomatic skin abrasions over knee and chin. Six weeks later during phase of neutropenia, presented with painful swelling of left lower jaw with painful localised eschar over chin and prepatellar region. Excision biopsy of cutaneous lesions and gingival biopsy revealed fungal hyphae (see tables 1&2). Aspergillus PCR in tissue specimen and Antigen detection in blood were negative. Tissue biopsy was culture positive for two fungal pathogens, *Fusarium* and *Rhizopus*. MRI of mandible was consistent with osteomyelitis. Aggressive treatment with multiple debridement procedures of the mandible, including dental extractions, granulocyte transfusions 5 days/week, lipid formulation amphotericin (10mg/kg/dose), followed by GCSF and tooth extractions resolved the infection 16 weeks later.

Table 1. Fungal cultures

Site	Fusarium	Rhizopus
Chin	++	–
Knee	–	+++
Jaw	++	++

Table 2. MIC of two organisms

Drug	Fusarium	Rhizopus
Ampho b	0.023 mcg/ml	0.5 mcg/ml
Posaconazole	>32 mcg/ml	>32 mcg/ml
Voriconazole	2.0 mcg/ml	ND

**Conclusions:** He is in remission and doing well and demonstrates a case of successful therapy despite dual posaconazole resistant fungal infection in an immunocompromised child.

## 79

**Fatal Hepatosplenic Infarction Secondary to Angioinvasive Disseminated Mucormycosis in a 16-year Old with ALL Relapse**

Kiran Belani, William Mize, Dennis Drehner, Susan Sencer, Linda Madsen, Stacy Roback. *Childrens Hospitals and Clinics of Minnesota, Pediatric Infectious Disease, Minneapolis, USA*

**Background:** Sixteen year old Caucasian female with relapse of T-cell acute lymphatic leukemia (ALL) for two years into Childrens Oncology Group Protocol 434.

**Materials, Methods and Results:** Induction therapy of relapse was complicated in the first week with severe anaphylaxis including rhabdomyolysis to Bortezomib administration. Treatment