Objectives: To analyze trends in microbiologic spectrum and susceptibility patterns of pathogens causing bacteremia in pediatric febrile neutropenic oncologic patients treated with two different empirical antibiotic regimens (ceftazidime (CAZ) plus gentamacin (GNT) during 1998–1999 and piperacillin/tazobactam (TAZ) plus GNT during 2000–2002).
Methods: A retrospective analysis of all bacteremias occurring in patients with fever and neutropenia admitted to the Pediatric Oncology Unit between 1/1/1998 and 28/2/2002.
Results: 81 bacteremia episodes were diagnosed in 40 patients. The most common oncologic diagnoses were leukemia (48%) lymphoma (15%) and bone and soft tissue malignancies (18%). Overall, 130 (33 and 97 during 1998–1999 and 2000–2002, respectively) organisms were isolated: 84 (65%) Gram negative (GmN), 39 (30%) Gram positive (GmP) and 7 (55) fungi. *Enterobacter* spp. decreased from 18% to 6% (p=0.05) and *Klebsiella* spp. increased from 9% to 15% from 1998–1999 to 2000–2002. GmP organisms increased from 24% to 31% (p=0.07) from 1998–1999 to 2000–2002: *S. epidermidis* increased from 6% to 13%, *Streptococcus* spp. from 6% to 11% while *S. aureus* decreased from 6% to 0%. There were no MRSA-due bacteremias. 9 (21%) of the 42 *E. coli*, *Klebsiella* and *Entrobacter* spp isolates were resistant to all cephalosporins and to ampicillin/ clavulanate; 7/9 (78%) were isolated during 2000–2002. 9/9, 3/3, 3/9 (33%) and 8/9 (89%) of these isolates were susceptible to imipenem, TAZ, GNT and ciprofloxacin, respectively. Overall pathogen susceptibility to TAZ (30 organisms tested) was higher compared to CAZ (76 isolates)–(94% vs. 82%, P=0.1). 22/24 (92%) and 43/54 (78%) of GrN organisms isolated during 2000–2002 were susceptible to TAZ and CAZ, respectively (P=0.2).
Conclusions: (1) An increase in the number of GmP organisms was recorded during the last 2 years; (2) An increase in the number of multi-drug resistant *E. coli*, *Klebsiella* and *Enterobacter* spp. occurred during the last 2 years; (3) The initial empiric therapy with TAZ was more appropriate than CAZ in the coverage of most of the pathogens causing bacteremia.

Incidence rates of bloodstream infections in children with long-term central venous catheters at Instituto Nacional do Câncer, Brazil (1995 to 2001)

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Objective: Measurement of Incidence Laboratory confirmed bloodstream infection (BSI) in children with long-term central venous catheters (LT-CVC).
Methods: Cohort of 745 LT-CVCs inserted in children, between January 1995 and July 2001, (main diagnosis, date of insertion, date of removal, LT-CVC type, indication for removal) and crosslink with blood culture data bank (date of colection, species isolated). Any positive blood culture with a common pathogens (such *as S. aureus*, Gram-negative bacilli, and *Candida* sp) were considered a catheter renal infection (CRI). Common skin contaminants (coagulase-negative staphylococci, diphtheroids, *Bacillus* sp., or *Micrococcus* sp.) isolated from two or more samples and associated with specific treatment or catheter removal, were considered a CRI.
Results: One or more BSI episodes were observed in 52% of LT-CVC. A total of 488 BSI episodes in 194.730 catheters-days (2.51 episodes/1.000 CVC-days). Hickman or Hickman-Broviac catheters had a higher incidence of BSI (3.06/1000 CVC-days) when compared with Port catheters (1.50/1000 CVC-days; OR=2,04; P<0.05). Pediatric patients with hematological neoplasia, showed a higher BSI incidence than children with solid tumors. (4.88/1000 versus 1.82/1000 CVC-days, OR=2,68; P<0,05). The mean time to the first BSI episode was 124 days (median=75 days).
Conclusion: The incidence of BSI in children with LT-CVC varies according to the type of catheter and the type of neoplasia being treated.

Methicillin-resistant *Staphylococcus aureus* (MRSA) in a general hospital–a ten-year review

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Objectives: We reviewed new patient episodes of colonization/ infection and new episodes of bacteremia caused by MRSA (methicillin-resistant *Staphylococcus aureus*). We investigated the trend of incidence of MRSA in General Hospital Uzice.
Methods: A total of 2255 MRSA were isolated from various clinical samples from January 1991 to December 2001.
Results: The annual rates of MRSA among *S. aureus* increased during the study period from 23.05% in 1991 to 65.11% in 2001 (linear trend of growth, p<0.01). The yield of MRSA was the highest from wounds/ulcers/skin swabs accounting for 83.28% while it was 1.86% from blood cultures. The overall incidence of colonization/ infection with MRSA was 1.12/100 (range 0.57–1.52) admissions and 0.98/1000 (range 0.50–1.29) patient-days.
Conclusions: The incidence of MRSA in our hospital is high, average 42.75% and has linear trend of growth.

Prevalence of resistant Gram-negative bacilli (GNB) in nursing homes (NH)

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Ceftazidime resistance (CTZ^R) among GNB is increasing in hospitals worldwide and may be a marker for

cross-resistance to other antibiotic classes. CTZ^R may be due to AmpC or extended spectrum β-lactamases (ESBL). ESBL (+) GNB have been noted with increasing frequency in acute care and in outbreaks in NH. In our NH from 1995–97, rates of CTZ^R in clinical isolates were 10%. From 11/00–3/02, screening of 1042 GNB clinical isolates from our attached hospital yielded (8%) CTZ^R and 21 (2%) ESBL (+) isolates. Little is known about endemic colonization rates with CTZ^R GNB or ESBL in NH. Admissions to our NH were prospectively screened for GNB, CTZ^R, and ESBL every 2 weeks. Oropharynx, perineum, and wounds swabs were plated on MacConkey (Mac) agar. GNB were screened for CTZ^R on Mac+CTZ agar. Rectal swabs were plated directly on Mac+CTZ agar. CTZ^R GNB were screened for ESBL by double disk diffusion using CTZ or cefotaxime alone or in combination with clavulanate. 65 patients (pts) were screened on multiple occasions. 87 GNB isolates were detected in 38 pt (58%). GNB were found more often in pts with wounds, p=0.05. Perineum (82%) and oropharynx (32%) were the most common sites of GNB colonization. *Escherichia coli*, *Pseudomonas*, *Klebsiella*, *Proteus*, *Enterobacter*, and *Citrobacter* were the most common genera isolated. 13 (20%) of colonized pt had CTZ^R GNB, most commonly *Pseudomonas* or *Enterobacter*. Four pt (6%) had an ESBL (+) strain. No association with GNB, CTZ^R, or ESBL carriage could be made with age, declining functional status, increased length of stay, presence of devices, or co-morbid illness. Rates of colonization with ESBL producing CTZ^R GNB in NH may approach rates described in hospitals.

Clinical and bacteriologic analysis of clinical isolates of multidrug resistant *Pseudomonas aeruginosa* in patients carrying hematologic disease

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Background: Carbapenems and quinolones have a broad spectrum of antibacterial activity, and they are most potent agents used for chemotherapy of infectious disease caused by Gram-negative rods. Recently, however, the emergence of the multidrug resistant *Pseudomonas aeruginosa* (MDRP) is of utmost clinical concern, little information in regard to the distribution of MDRP in hospitals and the clinical characteristics of infected patients is available. To address this, we reviewed retrospectively the clinical charts of the patients infected with MDRP to clarify their clinical characteristics and significance in the hematological ward and screened the resistance gene.

Methods: This study was conducted at Saitama Medical School Hospital in Saitama, Japan. We examined the antimicrobial susceptibilities of clinical isolates of MDRP, that were resistant to imipenem, amikacin, and ciprofloxacin, in hematological ward between 1999 and 2001. Then we screened for the bla_{IMP} gene, which produced the metallo-beta-lactamase IMP-1.

Results: A total of 16 isolated were detected in hematological disease patient in four years. We evaluated the clinical characteristics of 16 patients. MDRP organisms were isolated from stool sample (43.8%), urinary sample (25.0%) and respiratory sample (12.5%). Furthermore, the iatrogenic risk factor were anti-neoplastic agents (87.5%), IVH catheter (50.0%), steroids (43.8%), urinary catheter (43.8%). The clinical significance of detected MDRP was infection (25.0%) and colonization (68.8%). Infection was thought to have been the possible cause of death in 3 patients: clinical sepsis in two patient and terminal pneumonia in a patient. All isolations were detected the bla_{IMP} gene.

Conclusions MDRP is much detected from administration of anti-neoplastic patients in hematological ward. Infection-related death was more frequent in case MDRP were detected in blood samples.

Provision of safe potable water for immunocompromised patients in the Leeds Teaching Hospitals Trust

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Background: Efforts to ensure provision of microbiologically safe potable water for immunocompromised (IC) patients have focused on the elimination of *C. parvum*, although potable water may also contain opportunistic pathogens such as Gram-negative environmental bacteria. In the UK, official guidelines advise patients with compromised T-cell function to drink only cooled boiled water (CBW). The provision of large quantities of CBW at one hospital in Leeds was identified as presenting a safety risk for health care personnel and safer alternatives were sought.

Methods: A survey of provision of drinking water for IC patients throughout the Leeds Teaching Hospitals Trust was conducted. A range of options for potable water provision was then considered—CBW, carbonated and non-carbonated bottled water, sterile bottled water (SBW), mains water direct from the faucet (MW) and water filtered using commercial end-line filters (FW). The following criteria were examined: (1) microbiological safety, (2) end-user acceptability, (3) logistical considerations and (4) cost.

Results: Marked disparities in practice were identified, e.g. some units that provided CBW used sterile jugs, whereas others did not. Other areas provided only MW. Provision of CBW to HIV positive patients com-