

P0021

Paper Poster Session I

Severe sepsis, bloodstream infection and catheter-related bacteraemia

"Central venous catheter-related bloodstream infections in haematological patients – occurrence, aetiology and risk factors"

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Objectives: Analysis of surveillance of the central venous catheter-related bloodstream infections (CVC-BSIs) in haematological patients, including occurrence, etiology and risk factors of these infections. **Methods:** The study covers a period of 8 years (2006 – 2013) and is related to the risk factors and etiology of CVC-BSIs. The duration of catheter insertion, the number of CVC-BSIs and incidence density rates per 1000 catheter-days were calculated. Catheter tip cultures were performed according to Maki's semi-quantitative method. Bacterial strains were isolated and identified according to standard microbiological methods. All staphylococcal cultures were subsequently tested for methicillin susceptibility with a cefoxitin disc diffusion test. Enterococci were tested for vancomycin susceptibility, while Gram-negative rods for multidrug-resistance mechanisms. **Results:** In total 3961 central lines were analysed. The mean duration of CVC insertion decreased from 19.0 days in 2006 to 16.3 days in 2013. During 8 years of the study, 157 CVC-BSIs were reported. The incidence density rate decreased from 4.5/1000 catheter-days in 2006 to 2.7/1000 catheter-days in 2013, with the lowest rate – 1.5/1000 catheter-days – recorded in 2011. In total 153 strains of microorganisms were cultured – 143 bacterial (93.5%) and 10 fungal (6.5%). Among etiological agents the most common were staphylococci – 101 (66.0%) strains. Methicillin-resistant *S. epidermidis* (MRSE) comprised 62/77 (80.5%) strains, while methicillin-resistant *S. aureus* (MRSA) - 5/21 (23.8%) strains. Enterococci constituted 11/143 (7.7%) bacterial isolates, with 2 strains resistant to vancomycin. Among Gram-negative rods, enteric rods comprised 20/143 (14.0%) strains and non-fermenting rods – 4/143 (2.8%) strains. Six out of 20 (30.0%) strains of enteric rods were ESBL-producing isolates. Eight strains of *C. albicans* and 2 strains of *C. parapsilosis* were cultured. **Conclusions:** During the study period, the incidence density rate of CVC-BSIs decreased from 4.5/1000 catheter-days in 2006 to 2.7/1000 catheter-days in 2013. The main etiological agents were staphylococci, with coagulase-negative staphylococci being the most common group of isolates (56.2% of all strains). Yeast-like fungi constituted 6.5% of all cultured strains. Gram-negative non-fermenting rods were very uncommon (2.8%). As from 2011 an emergence of multidrug-resistant bacteria has been observed – ESBL-producing strains of enteric rods and VRE strains of *E. faecium*.