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Session: Antibiotics

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Very low rate of antibiotic resistance among HIV positive children in Kyrgyzstan compared to those from Cambodia

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Background: Bacterial and fungal co-infections are very frequently present among HIV-positive children and such condition requires often administration of antibiotics during their therapy. Spectrum of infections occurring in HIV positive children is wide and using of antibiotic prophylaxis can stimulate development of resistance. We aimed to evaluate the spectrum of infections among paediatric HIV patients and to assess resistance rates of those microorganisms.

Methods: Samples obtained from fifty one HIV-positive children from Kyrgyz provinces Osh, Bishkek, Jalal-Abad, Kara-Suu and Nookatsk, who have been receiving HAART for 3 years, were included. During their previous hospital stays, children were frequently treated with ampicillin. Cultivations from samples were performed and antibiotic profiles were assessed.

Results: In 51 HIV positive children we found out *Moraxella catarrhalis* (27,71%), *Streptococcus viridans* (20,48%) and *Candida albicans* (15,66%) being the most frequent microorganisms. Interestingly, prevalence of staphylococci was not very high (18 – 21,69%), and surprisingly, only 2 cases (2,41%) of MRSA were noticed. Also, resistance rate among bacteria was really low, with clindamycin resistance acting as the most prevalent (5,6% of bacterial isolates), followed by ampicillin and erythromycin (4,9% and 2,8% respectively). Resistance to 5-fluorocytosine was noted in one *C. albicans* isolate, with the rest of *Candida* isolates being fully susceptible to all antifungals tested. Co-infection with 2 or 3 microorganisms was identified in 20 patients (39,22%).

Conclusion: Resistance rate among bacterial isolates from HIV positive Kyrgyz children is, fortunately, very low, even to ampicillin which was often used in their previous therapy. These results are very interesting, especially when compared to our previous studies with Cambodian children after 3 years of HAART, in which resistance among gram-positives was definitely higher (59%). Thus, this group of children deserves more research to be done.

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Resistance of strains *S. epidermidis*, isolated from patients with knee or hip joint replacement

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Background: The most common pathogen of a group of coagulase-negative staphylococci in patient with prosthetic joint infection (PJI) is *S. epidermidis*. This microorganism is characterized by a pronounced ability to adhesion to the implant and the biofilm production. Prosthetic joint infections caused by methicillin-resistance staphylococci represent a major therapeutic challenge.

The goal of the present retrospective study is estimate the frequency of isolation and resistance strains of *S. epidermidis* in the primary and revision knee or hip joint replacement (PJR and RJR).

Methods: We examined the records of 96 isolates *S. epidermidis* is chosen from intraoperative material (bone and tissue) and post-operative fluid samples from 94 patients that underwent surgery for PJR and RJR from January 2007 to December 2009. Antibiotic sensitivity of strains was tested by agar dilution method.

Results: The frequency of isolation *S. epidermidis* for the period was 18.4%, including 59.4% MRSE. Strains resistance to vancomycin and linezolid was not detected. Good activity remained rifampin, fosfomicin, moxifloxacin, co-trimoxazole. Ciprofloxacin was active against 78.5% of strains. High resistance was observed to tetracycline (37.2%), erythromycin (41.5%), gentamicin (45.5%), clindamycin (54.3%).

Patients who were identified strains of *S. epidermidis* divided into groups. 18 patients without previous operations on the joint were the first group, 51 patients with endoprosthesis replacement or osteotomy of the femur in history - the second, 25 patients with a PJI in history - the third group. The frequency of isolation MRSE was 33.3% in the first group, 71.2% in the second and 53.8% in the third group. Prosthetic joint infection was diagnosed in the subsequent year in 14 patients (27.5%) from the second group.

Conclusion: *S. epidermidis* are the most frequently isolated organism from patients after primary or revision arthroplasty. Prior to the joint operations are a major risk factor for the selection of MRSE and development a PJI. Drugs of choice for treating infections caused by MRSE vancomycin, linezolid, moxifloxacin. For prolonged course of antibiotic therapy of PJI with MRSE can be recommended rifampicin or co-trimoxazole with fluoroquinolones.

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