

P2009

Abstract (poster session)

**The role of phylogenetic groups of *Escherichia coli* in childhood recurrent urinary tract infections**

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**Objectives.** We aimed to compare the role of phylogenetic groups (PG) of *E. coli* in antibacterial (AB) susceptibility and containment of class 1 integrons in relation to first infectious attack and subsequent recurrences of urinary tract infection (UTI) caused by relapsing or re-infecting strains. **Methods.** Altogether 89 urinary *E. coli* isolates from 41 children (35 girls and 6 boys) with a first acute pyelonephritis were derived from index (n=41) and recurrent (n=48) UTI episodes. PGs and occurrence of class I integrons were detected by PCR. E-tests were used for antimicrobial susceptibility testing. PFGE was applied to compare the consecutive 74 isolates of 26 patients with recurrences. **Results.** More than half (51/89; 57%) of isolates belonged to PG B2. Group A (16/89) and D (18/89) were found with similar frequency, and B1 was the least common (4/89). AB resistance was detected to trimethoprim-sulfamethoxazole (28%), ampicillin (44%), cefuroxime (27%), cefotaxime (3%) and gentamicin (2%). There was no association between AB susceptibility and PG-s. PFGE revealed the unique clonal strains in 20/26 (77%) of patients, presenting as relapses. PG B2 caused more often relapses after the first attack than groups A, B1 and D (0/16 vs. 13/16,  $p<0.001$ ; 1/16 vs. 13/16,  $p<0.001$  and 2/16 vs. 13/16,  $p<0.001$ ; respectively). Clonal strains compared to individual ones had lower sensitivity to cefotaxime (MIC median 0.079 vs. 0.032, respectively;  $p=0.004$ ) and gentamicin (MIC median 0.75 vs. 0.5, respectively;  $p=0.011$ ). Strains of PG B2 consisted more often integrons than group A (45/51 vs. 8/16, respectively;  $p=0.003$ ). IntI pos compared to neg strains had higher MIC values to cefuroxime (MIC median 4.0 vs. 2.0, respectively;  $p=0.001$ ), cefotaxime (MIC median 0.079 vs. 0.032, respectively;  $p=0.014$ ), gentamicin (MIC median 0.75 vs. 0.44, respectively;  $p=0.013$ ). **Conclusion.** Relapses of UTI are more frequent than reinfections. In children the PG B2 strains of *E. coli* containing integrons are prevalent at the first attack of recurrent UTI. Though the integron positive strains of *E. coli* express higher MIC values the PG diversity is not associated with AB susceptibility or development of resistance in recurrent strains.