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# CIC-ASSOCIATED ASYMPTOMATIC BACTERIURIA IN CHILDREN WITH MYELODYSPLASIA: SHOULD ESBL-PRODUCING BACTERIA CHANGE OUR MANAGEMENT?

Hypothesis / aims of study
The majoritiy of children with myelodysplasia and neurogenic bladder dysfunction (NBD) who are on clean intermittent catheterization (CIC) present with asymptomatic bacteriuria. Although asymptomatic bacteriuria does not warrant antibiotic treatment it is still necessary to sterilize the urine in these children prior to video-urodynamic studies (VUDS). Extended-spectrum beta-lactamase (ESBL) producing bacteriuria frequently challenges antibiotic treatment because of the resistance to conventional antibiotics. The necessity of parenteral treatment may mandate hospitalization in children with ESBL- producing bacteriuria. Our aim is to compare the neuro-urological parameters in these children with and without ESBL- producing bacteria to find whether there is any clinical predictor of ESBL-producing bacteriuria.

Study design, materials and methods
In this prospective study, 30 consecutive children (13 male, 17 female) with ESBL positive bacteria and another 30 consecutive children (14 male, 16 female) with ESBL negative bacteria on their urinary cultures were divided into GROUP 1 and GROUP 2, respectively. All children had myelodysplasia-induced NBD and CIC-associated asymptomatic bacteriuria and were planned to undergo VUDS between the years 2009 and 2012. Groups were compared in terms of renal-bladder ultrasound, DMSA scintigraphy and VUDS. Student-T test was used for statistical analysis.

Results
Mean age of the patients was 77 months (min: 5 – max: 216) in GROUP 1 and 78 months in GROUP 2 (min: 2 – max: 240). Table 1 demonstrates the comparison between groups in terms of all parameters assessed in this study. Statistically significant difference was found in terms of only 2 parameters: antimicrobial prophylaxis and mean number of hospital attendance. In GROUP I and GROUP II, 85 % and 53 % of children were on antimicrobial prophylaxis, respectively. Mean numbers of hospital attendance in 2 years were 8.3 (min 2-max 21) and 5.7 (min 1-max 16) in GROUP I and GROUP II, respectively. Upper urinary tract deterioration rates and bladder dynamics were similar in both groups as shown in Table 1. As seen in table 2, there was no statistically significant difference in number of children who underwent prior surgery between two groups.

Interpretation of results

**TABLE 1**

| | **GRUP 1** | **GRUP 2** | **P VALUE** |
|---|---|---|---|
| Average age (month) | 77(min:5,max:216) | 78(min:2,max:240) | 0.96 |
| Antimicrobial prophylaxıs | 25 (%85) | 16 (%53) | **0.012** |
| Constipation | 16(%53) | 17(%54) | 0.795 |
| Mean number of hospital attendance in 2 years | 8.3(min:2,max:21) | 5.7(min:1,max:16) | **0.028** |
| Motor deficiency | 23 (%76.6) | 19 (%63.3) | 0.260 |
| Maximum bladder capacity (ml) | 164 +/-154.6 ml (min:36,max:780) | 183 +/-163.7 ml (min:16,max:806) | 0.62 |
| LPP (cmH2O) | 51 +/-49.3 ml (min:6,max:185) | 46 +/-44.6 ml (min:3,max:177) | 0.61 |
| Scar in DMSA | %15 (9 renal units) | %11.3 (7 renal units) | 0.50 |

**TABLE 2**

| | Grup 1 | Grup 2 | P value |
|---|---|---|---|
| BoNT A injection | 6 (20 %) | 4 (13 %) | |
| Vesicostomy | 3 (10 %) | 1 (3 %) | |
| Subureteric injection | 1(3 %) | 0 | |
| Total operations | 10 | 5 | 0.13 |

Concluding message
ESBL-producing bacteriuria has been found to be associated only with increased frequency of hospital attendance and long term antibiotic prophylaxis among all neurourological parameters assessed in this study. Thus, antimicrobial prophylaxis must be avoided in children with asymptomatic bacteriuria associated with CIC.

Disclosures
**Funding:** There is no source of funding or grant **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** We havent performed anything without the routine procedures **Helsinki:** Yes **Informed Consent:** No