

## Clinical Significance of Extended Spectrum Beta-Lactamase Producing E.coli in Pediatric Urinary Tract Infection

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### Clinical Significance of Extended Spectrum Beta-Lactamase Producing E.coli in Pediatric Urinary Tract Infection

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**Purpose:** The incidence of community-acquired urinary tract infection (UTI) due to extended spectrum beta-lactamase producing *Escherichia coli* (ESBL (+) *E. coli*) has been increased worldwide. ESBL causes resistance to various types of the newer  $\beta$ -lactam antibiotics, including the expanded spectrum cephalosporins and monobactams. We aimed to investigate the severity of UTI and associated genitourinary malformations in children with febrile UTI caused by ESBL (+) *E. coli*.

**Methods:** We retrospectively reviewed the medical charts of 290 patients diagnosed as febrile UTI caused by *E. coli* between January 2008 and October 2010 at Korea University Medical center. We classified the patients into two groups with ESBL (+) – and (–) – *E. coli* group according to the sensitivity of urine culture. Fever duration, hospital admission period, white blood cell (WBC) counts and C-reactive protein in peripheral blood, severity of pyuria, and the presence of hydronephrosis, acute pyelonephritis and vesicoureteral reflux were compared between the two groups. The severity of pyuria was divided into five classes according to the urinary WBC counts (1, WBC 0–4 /high power field (HPF); 2, 5–9 /HPF; 3, 10–29 /HPF; 4, 30–60 /HPF; 5, >61 /HPF) and compared between the groups.

**Results:** Patients with ESBL (+) *E. coli* were 32, and those with ESBL (–) *E. coli* were 258. There was a significant increase in the severity of pyuria in the ESBL (–) *E. coli* group compared to the ESBL (+) *E. coli* group ( $3.61 \pm 0.096$  Vs.  $2.88 \pm 0.268$ ,  $p < 0.05$ ). Fever duration, hospital admission period, WBC counts and C-reactive protein in peripheral blood, and the presence of hydronephrosis, acute pyelonephritis and vesicoureteral reflux were not different between the two groups.

**Conclusion:** Our data shows that ESBL producing *E. coli* may not be related to the severity of UTI and associated genitourinary malformations.

**Key Words:** 베타락탐내성, 요로감염, 소아

beta-lactam Resistance, Urinary Tract Infections, Child