

첫요로감염환아에서 하향적 접근의 임상적 특징

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Characteristics of Children with First Febrile Urinary Tract Infection and Results of Top-Down approach work

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Objective: The aim of this study is to provide the clinical characteristics, the frequency of renal abnormalities, their antibiotic susceptibility profile, and the benefit of the Top-Down approach in children with the first febrile urinary tract infection.

Methods: We retrospectively reviewed 117 patients who were admitted to Yeungnam University Hospital and treated for first febrile UTI during a 5-year period (from February, 2006 to December, 2010). According to the presence of abnormalities with Tc-99m DMSA, clinical parameters and associated renal abnormalities were assessed.

Results: Among the patients, 86 (74%) were male and 87% had their first UTI episode during infant period. The most common causative organism was Escherichia coli (85%) and 96% was Gram-negative organism. They had high rate resistance to ampicillin (65%), amoxicillin/clavulanate (24%), and TMP/SMZ (30%). Seventy five children (64%) showed positive findings in DMSA scan. Among these patients, 63 patients were performed voiding cystography and 17 cases demonstrated vesicoureteric reflux and one case ureterocele. Thirty nine patients were performed scanning for repetition after 6 months and 21/39 (54%) were considered scarring but 18 of them were improved state. And among them, 13/21 (62%) cases presented vesicoureteric reflux. WBC ($16,957 \pm 6,892/\mu\text{L}$ vs. $12,750 \pm 4,386/\mu\text{L}$), ESR (40.9 ± 29.0 mm/H vs. 22.9 ± 24.5 mm/H), CRP (5.44 ± 4.58 mg/dL vs. 2.79 ± 3.57 mg/dL) levels were significantly higher in DMSA positive group ($p < 0.05$). There was no statistically significance in sex and fever duration. The ability of duplex renal ultrasonography to predict renal parenchymal damage was limited. Ultrasonography were positive in 39/75 (52%) with DMSA positive group, 10/42 (24%) with DMSA negative group. Recurrent episode of febrile UTI were demonstrated 2 in DMSA positive group and 2 in DMSA negative group. Three of 4 cases, they showed vesicoureteric reflux.

Conclusion: DMSA renal scan is a sensitive method for the severity of inflammation and kidney injury. Top-Down approach to first febrile UTI children showed the low recurrent rate. So, if initial DMSA scan is normal, VCUG could be reserved.

Key Words: 요로감염, 요관역류, DMSA 스캔

Urinary tract infections, Vesicoureteric reflux, Tc-99m DMSA