TREATMENT EXPERIENCE WITH AMIKACIN IN PEDIATRIC PATIENTS WITH FEBRILE URINARY TRACT INFECTIONS CAUSED BY EXTENDED-SPECTRUM B-LACTAMASE-PRODUCING *ESCHERICHIA COLI*

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Background

Amikacin has shown promising in vitro activity against extended-spectrum β -lactamase (ESBL)-producing urinary isolates of *Escherichia coli*; however, clinical data are limited in children. We aimed to investigate the clinical and microbiological outcomes of community-acquired febrile urinary tract infections (FUTIs) caused by ESBL-producing *E. coli* treated with amikacin monotherapy in children.

Materials and methods

A retrospective cohort study was performed on pediatric patients ≥ 3 months of age with FUTIs caused by ESBL-producing *E. coli*. Amikacin monotherapy was initiated as definitive treatment of FUTIs in patients who

failed to respond to the initial empiric treatment, and whose admission urine cultures yielded positive results for ESBL-producing *E. coli* which were resistant to empiric treatment but susceptible to amikacin. Amikacin was given at a dose of 7.5 mg/kg intravenously twice daily. Patients were excluded if they had impaired renal function at the baseline and signs of sepsis.

Results

A total of 34 pediatric patients (22 females) were enrolled in this study. The median age was 16 months (range, 5- 48 months). All *E. coli* isolates were susceptible to amikacin with MICs of ≤ 4 mg/L. The median duration of treatment was 7 days (range 3-10 days). Of the 34 patients, 33 (97%) improved clinically

without requiring any additional antibiotics; repeat urine cultures on day 3 of amikacin treatment yielded negative results. The median time to resolution of fever was 2 days (range, 1–3 days). Treatment failure was only seen in 1 patient with concomitant bacteremia and persistent fever, who was then treated with intravenous ertapenem.

Conclusions

Our results suggest that amikacin might be a reasonable alternative to carbapenems for treating nonbacteremic FUTIs caused by ESBL-producing *E. coli* in children with normal renal function, if the isolate is susceptible.