

## **Abstract**

**Background:** In 2014, the Thai Pediatric Nephrology Association (TPNA) expanded the coverage of their febrile urinary tract infection (UTI) guideline from 2 months to 2 years to 2 months to 5 years to compensate for potential underuse of prenatal ultrasound and delayed diagnosis of febrile UTI, which could lead to missed detection of congenital abnormalities of kidney and urinary tract (CAKUT), including vesicoureteral reflux (VUR).

**Aims:** To compare the clinical characteristics of febrile UTI, the prevalence of CAKUT, and the applicability of and compliance with TPNA guideline imaging study recommendations between children aged 2 months to 2 years and children aged 2 to 5 years.

**Methods:** Three hundred and ten children aged 2 months to 5 years presenting with febrile UTI during 2014-2019 were reviewed. Renal and bladder ultrasound (RBUS) is recommended for all febrile UTI, and voiding cystourethrography (VCUG) is recommended in patients with at least 1 of 8 proposed risk factors.

**Results:** The mean age of 259 younger and of 51 older age children was  $8.2 \pm 5.6$  and  $40.0 \pm 10.9$  months, respectively. There were no significant differences between younger and older children for imaging study compliance (73.0% vs. 78.4%), abnormal RBUS (18.8% vs. 16.7%), abnormal VCUG (27.7% vs. 50.0%), or CAKUT (15.4% vs. 21.6%). Using the proposed risk factors, high-grade (III-V) VUR (84.2%) was detected more frequently than low-grade (I-II) VUR (15.8%).

**Conclusions:** The TPNA febrile UTI guideline imaging recommendation was shown to be applicable in both younger and older children, and it improved detection of CAKUT and high-grade VUR.

**Keywords:** Clinical characteristics, febrile urinary tract infection, Thai guideline imaging recommendations, children, renal and bladder ultrasound, voiding cystourethrography

