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Acute kidney injury occurs only rarely in patients with Kawasaki disease

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To the Editor: Chuang *et al.* (1) investigated the clinical characteristics and laboratory data including serum creatinine levels of 336 Taiwanese patients with Kawasaki disease (KD) to determine the prevalence of acute kidney injury (AKI) and its associated factors. They reported that 28% of their patients had AKI, with young age and a high alanine transaminase level being associated with AKI in these patients.

KD causes systemic vasculitis that may include involvement of the kidneys. However, with the exception of sterile pyuria and trace proteinuria, kidney involvement in KD is uncommon and AKI has been reported only rarely in patients with KD (2).

We carried out a retrospective review of electronic medical records for clinical, laboratory, and echocardiographic data in 249 Japanese children with KD admitted to Niigata City General Hospital between April 2007 and March 2017. KD was defined according to the AHA 2004 diagnostic criteria (3), while AKI was defined as a serum creatinine level ≥ 1.5 times the upper limit of normal age-specific serum creatinine reference levels (1). The study showed that no patient developed AKI (**Table 1**). Although the laboratory data were similar to those reported by Chuang *et al.* (1), our patients had fewer coronary artery abnormalities (CALs) during the acute phase (7.2%) compared with patients in the earlier study (21.7%).

Although the reasons are unclear why these two studies showed a different prevalence of AKI in patients with KD, it is possible that differences in disease severity may have affected the results. Because the study of Chuang *et al.* was performed in a university hospital, they may have included patients with more severe KD than in the vast majority of non-university hospitals. Our study was performed in a non-university hospital, with the prevalence of CALs during the acute phase of the study being similar to that in a recent nationwide survey of KD in Japan (8.1%) (4) and also that in a large epidemiological study of KD in Taiwan (7.2%) (5). These findings suggest that our study is a reliable assessment of the clinical features of KD in the general population and indicates that AKI occurs only rarely in most patients with KD.

Table 1. Clinical and laboratory data of 249 patients with KD

Variables	*n* (%) or median (range)
Male/Female	159/90 (63.9%/36.1%)
Age (years)	2.42 (0.17–10.5)
Age category	
<0.5 years	12 (4.8%)
0.5–2 years	95 (38.2%)
>2 years	142 (57.0%)
Symptoms onset of KD diagnosis (days)	5 (3–10)
Laboratory data	
WBC (k/μl)	16.24 (2.14–19.02)
WBC > 15 k/μl	119 (47.8%)
Platelet (k/μl)	343 (108–791)
Platelet > 450 k/μl	34 (13.7%)
CRP (mg/dl)	8.03 (0.29–31.93)
CRP > 3 mg/dl	225 (90.4%)
ALT (U/l)	114.7 (6–1215)
ALT > 40 U/l	117 (47.0%)
Urine WBC ≥ 10/HPF	46 (32.0%)
Treatment	
IVIG+AP	206 (82.7%)
IVIG+AP+CS	37 (14.9%)
AP only	6 (2.4%)
Outcome	
AKI	0 (0.0%)
Coronary artery abnormality	18 (7.2%)
Coronary artery aneurysm	2 (0.8%)
Coronary artery ectasia	16 (5.6%)

AKI, acute kidney injury; AP, antiplatelet therapy; CS, corticosteroid therapy; IVIG, intravenous immunoglobulin therapy; KD, Kawasaki disease; WBC, white blood cells.

Disclosure: The authors declare no conflict of interest.

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