THE CHARACTERISTICS AND RISK FACTORS OF MORTALITY FOR AKI IN DIFFERENT AGE GROUPS IN CHINA — A NATIONAL CROSS SECTIONAL STUDY

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Introduction and Aims: In recent years, the incidence of acute kidney injury (AKI) in hospitalized patients is increasing. Age is an independent risk factor of AKI. The causes and outcomes of AKI in children, middle aged and old patients are different. This country-based study aimed to identify the characteristics and mortality factors for AKI in different age groups in China.

Methods: Using data from 374,286 adult patients (≥18 years) that were admitted in 44 study hospitals (a national cross-sectional survey), we investigated the characteristics and risk factors of mortality for AKI in four different age groups (age 18-39 years, age 40-59 years, age 60-79 years, age ≥80 years). The identification criteria for AKI included the 2012 KDIGO AKI definition and an increase or decrease in serum creatinine by 50% during hospital stay (expanded criteria). The characteristics for AKI were calculated, and the in-hospital mortality factors for AKI were analyzed using logistic regression.

Results: The country-based survey included 7,604 AKI patients (7604/374,286, 2.03%). The proportions of AKI in four age groups were 11.52%, 30.79%, 41.03% and 16.66%. The baseline serum creatinine increased and the baseline estimated GFR decreased as age increased. In almost all age groups, the proportion of AKI was higher in men than in women. In any age group, patients with AKI stage 1 were in majority (43.4%, 42.4%, 46.4%, 52.2%, respectively), and the most common classification of AKI was pre-renal AKI (44.3%, 51.3%, 52.3%, 56.4%, respectively). Higher AKI peak stage was the in-hospital mortality factors for AKI in all age groups, except for the AKI stage 2 patients of age 18-39 years patients. History of CVD was the mortality factor for AKI in age ≥80 years group (odds ratios [95% CIs], 1.49 [1.04-2.12]). Chronic kidney disease (CKD) was not the mortality factors for AKI in all age groups. Critical illness was the mortality factors for AKI in all age groups (odds ratios [95% CIs], 7.73 [3.74-16.0], 7.17 [4.90-10.5], 6.23 [4.70-8.28], 5.92 [4.19-8.34], respectively).

Conclusions: The characteristics and mortality factors for AKI vary by age. Elderly patients were the main population of AKI. The most common type of AKI was pre-renal AKI in all age groups. Higher AKI peak stage and critical illness were related to the mortality of AKI patients.