KSN 2017 Abstract

KSN-17-P004

Acute kidney injury in pediatric cancer patients: Incidence and outcome

Peong gang PARK[1], Eunjeong KANG[2], Hye sun HYUN[1], Eujin PARK[1], Hyung-jin YOON[3], Hajeong LEE[2], Il soo HA[1], Hae il CHEONG[1], *Hee gyung KANG[1]

[1]Pediatrics, Seoul National University Children Hospital, Korea,South, [2]Internal medicine, Seoul National University Hospital, Korea,South, [3]Biomedical Engineering, Seoul National University College of Medicine, Korea,South

Objectives : Acute kidney injury (AKI) is commonly encountered in serious disease conditions. Pediatric cancer patients also experience AKI often. While AKI is known to have adverse impact on outcomes in various clinical settings, incidence and impact of AKI on pediatric cancer outcome is not well known. The purpose of this study was to identify the incidence of AKI in pediatric cancer patients and their impact on survival.

Methods : We reviewed pediatric patients who were diagnosed with malignancy in Seoul National University Hospital between 2004 and 2012, and investigated those who had initial and at least one subsequent measurement of creatinine by October, 2015. Serial renal function of the subjects was assessed and AKI was identified according to KDIGO criteria: one third decrease of estimated glomerular filtration rate (eGFR) compare to the baseline eGFR as stage 1, 50% decrease of eGFR as stage 2, and 66.7% decrease or below 35 ml/min/1.73m2 as stage 3. Risk factors of AKI within 1 year after cancer diagnosis, and impact of AKI on overall survival of patients were analyzed.

Results : Among 2,552 patients of malignancy, 1,657 patients (M:F 961:696) had more than one measurement of creatinine during the study period of mean 3.21 years. Their mean age was 7.98 years and mean eGFR at diagnosis was 97.5 mL/min/1.73m2. Central nervous system cancers were 31.3%, leukemia and lymphoma 23.8%, and head and neck cancers 11.9%. Mortality rate was 18.9% during follow up. Among them, 863 (51.9%) developed acute kidney injury: their AKI stages on their worst eGFR were stage 1 in 21.2%, stage 2 in 17.6%, and stage 3 in 12.9%. More than half of them developed AKI within first month after cancer diagnosis. The incidence of AKI was varied according to cancer type, from 25% in endocrine organ malignancy to 66.7% in gastrointestinal tract. Risk factors of AKI were younger age, cancer site, administration of chemotherapy and radiocontrast media for CT scan. Type of cancer and advanced AKI of stage 2 or 3 were independent risk factors of mortality in pediatric cancer patients.

KSN 2017 Abstract

Conclusions : Acute kidney injury is common in pediatric cancer patients and it adversely affects survival of pediatric cancer patients.

Keywords : Pediatric cancer, Acute Kidney Injury