CRITICAL CARE NEPHROLOGY

INFLUENCE OF CHRONIC KIDNEY DISEASE IN THE ACUTE KIDNEY INJURY PROGNOSIS IN HOSPITALIZED PATIENTS. DETECT-H PROJECT

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Introduction and Aims: Acute kidney injury (AKI) is a common problem in-hospital patients. AKI and chronic kidney disease (CKD) are both related and associated with a significant morbidity and mortality. The aim of our study was to analyse the prevalence of AKI in our hospital, length of stay (LOS), in-hospital mortality and evaluate the influence of CKD in AKI prognosis.

Methods: To improve renal dysfunction detection rates, nephrology department has a fully automated, electronic alert system which identifies all cases of reduced estimated glomerular filtration rate (eGFR) according to CKD-EPI equation in patients over 14 years. Systematic alert is sent when eGFR is <60 mL/min/1.73m² or <30 mL/min/1.73m² for patients older than 80 years. All episodes of detected patients with decreased eGFR since admission date and during the hospitalization period are studied and staged. For the analysis we reviewed retrospectively serum creatinine (sCr) values and considered the highest AKI stage reached along the admission. The "baseline" sCr was the lowest sCr value between 0.5-6 months prior to date of admission. In the absence of a baseline sCr, lowest in-hospital sCr was considered. The peak sCr was the highest sCr within the episode. AKI or CKD is established according to Kidney Disease: Improving Global Outcomes (KDIGO) guidelines. Chronic dialysis patients were excluded. Incidence of AKI, in-hospital mortality and LOS is reported.

Results: There were 2,616 alerts issued in 12 months (11.8% of the admissions), between January to December 2014. Median age was 77 years (interquartile range (IQR) first and third quartiles 70-82), 54% were men. Renal function before admission was present in 2,164 alerts (82.7%). AKI was present in 1,687 admission episodes (64.5% of alerts). The proportion of admission episodes generating an AKI stage 1, 2 and 3, respectively was 837 (32%), 420 (16.1%) and 430 (16.4%). Renal dysfunction without AKI criteria was present in 785 episodes (30%). Global in-hospital mortality for all detected patients was 14%. Mortality increased with greater severity of AKI: 3.4% in renal dysfunction without AKI criteria and 10.5%, 22.1%, 31.6% in AKI stage 1, 2 and 3 respectively (p<0.001). Median LOS across all stages of AKI increased as the stage of AKI increased: 8±8 days for patients with stable CKD during the hospitalization episode, 10±8 days for AKI stages 1, 12±9 days for AKI stage 2 and 16±16 days for stage 3 (p<0.001). AKI mortality was not higher in CKD patients within different AKI stages (Table 1).

Conclusions: Electronic alerts are an effective tool to detect in-hospital renal dysfunction patients. AKI is associated with a poor in-hospital prognostic and a longer in-hospital stay. Mortality and LOS increased with greater AKI severity. In our study, CKD patients have not a higher mortality than preserve renal function patients after AKI.