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Assessment of follow up and outcomes of patients with AKI requiring renal replacement therapy in the ICU

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Introduction: Acute kidney injury (AKI) is a common and increasing disease of patients in critical care, the main stay of treatment is supportive and renal replacement therapy (RRT). Increasing evidence has established that there is strong link with AKI and progression to chronic kidney disease (CKD) and end stage renal failure (ESRF). Currently specialist services will follow up anyone that has RRT on going or are discharged to renal, but there is no clear pathway to assess who would best benefit from a follow up.

Objectives: Assess whether a sample of patients that received RRT in ICU had a Nephrology follow up appointment, and determine if there was a need for the service. Assess patient outcomes for those that were discharged from ICU and study any differences between patients with isolated AKI, pre-existing CKD, gender and age.

Methods: We performed a retrospective longitudinal cohort study analysis of all patients that received RRT after an AKI in the Greater Glasgow and Clyde Hospitals over one year. Renal function at 3-6 months pre-admission and post discharge were examined by comparing urea, creatinine and eGFR values. Nephrology follow up status was also investigated. We excluded patients that had renal baselines out with the 3-6-month period.

Results: From 1243 patients that had an AKI and received RRT in ICU, we sampled 130 admissions with 68 patients surviving discharge from ICU. Of these, 100% of patients had a pre and post-discharge renal baseline within 3-6 months' timeframe. Only 28 patients (41%) had a nephrology follow-up, of these, 24 patients (86%) had abnormal eGFR results (<60 ml/min/1.73 m²) and 4 patients (14%) had normal eGFR status. The remaining 49 patients (59%) were not followed up, 15 (37%) were left with an abnormal eGFR. Mortality in the both groups was identical at 10%. Paired t-test analysis was used to analyze pre-admission vs. post discharge renal baselines in normal eGFR patients; Urea 5.4±0.6 vs. 7.0±2 mmol/L, p0.04, creatinine 83±20 vs. 96±22 mmol/L, p>0.05, eGFR 58±1.4 vs. 54±3.4, p0.02 compared to CKD patients; Urea 21.4±6.1 vs. 15.1±3.4 mmol/L p0.04, creatinine 474±156 vs. 372±110 mmol/L, p>0.05, eGFR 18.4±5.6 vs. 24.3±7.5, p>0.05, and in the follow up group; Urea 10.7±4.4 vs. 6.5±1.5 mmol/L, p=0.03, creatinine 196±112 vs. 91±12 mmol/L, p0.03, eGFR 50±6 vs. 55±3, p>0.05, compared to the non-follow up group: Urea 13.9±4.5 vs. 15.8±3.7 mmol/L, p>0.05, creatinine 313±105 vs. 379±110 mmol/L, p>0.05, eGFR 29±8 vs. 24±8, p0.03. Overall males had greater in hospital death (65%, n=52) and increased admission (58%, n=69). Surviving females showed greatest post-discharge mortality (75%, n=6) and follow up rates (65%, n=28).

Conclusions: The follow up rates for AKI patients in ICU receiving RRT is varying despite increasing evidence of morbid patient's outcomes. Therefore, an efficient follow up service that can identify patients most at risk of CKD/ESRF is required to ensure patients are able to maintain what renal function remains.

Biography

Robert Hafes is a final year medical student at the University of Glasgow, before which he was a Biomedical Scientist in Haematology. He is involved in Intensive care and Emergency medicine research, and has worked together with the CHUK in Kigali, Rwanda. Currently he is working on setting up an undergraduate pre-hospital medicine programme in Glasgow.

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