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P059 -IMPACT OF BODY MASS INDEX ON RENAL AND MORTALITY OUTCOMES AFTER ACUTE KIDNEY INJURY: A SYSTEMATIC LITERATURE REVIEW

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Introduction:

The UK National Institute of Clinical Excellence (NICE) guidelines highlight the need to identify risk factors which may predispose some patients to experience poor long-term outcomes following an episode of acute kidney injury (AKI). Obesity is an independent risk factor for both AKI and chronic kidney disease (CKD) though little is known about the concomitant impacts of body mass index and AKI on outcomes. The aim of this review was to summarise the evidence regarding the role of body mass index (BMI) on long-term renal and mortality outcomes in individuals post-AKI.

Methods:

Systematic literature review of Medline, EMBASE and Scopus until May 2018. Studies in adults with AKI were included if they: examined renal outcomes (renal recovery, development of CKD, CKD progression, or end stage renal disease (ESRD)) or mortality; used AKI defined per a standardised definition or equivalent; conducted analysis by BMI; and had follow-up of at least 90 days.

Results:

6 cohort studies (2 prospective, 4 retrospective) were identified examining the effect of BMI on renal and/or mortality outcomes after an episode of AKI. There was heterogeneity in definitions of AKI and renal recovery. For renal outcomes, no studies were identified that reported on the effect of BMI on the development or progression of CKD or ESRD following an episode of AKI. 3 studies reported on renal recovery at 90 days post AKI, including 1 with a composite end-point of renal non-recovery or death. Defining recovery as independence from renal replacement therapy at 90 days, BMI did not modulate recovery in 2 studies. Using the composite outcome, 1 study observed a lower BMI to be predictive of 90-day renal non-recovery (defined as eGFR \leq 60mls/min) or death. For mortality outcomes, a higher BMI consistently exhibited a protective effect for 90-day mortality (3 studies) and 6-month mortality (1 study). Conversely, in the largest study found, and the only to include a non-AKI comparator group, BMI did not modify the risk of mortality 1-year post-AKI. Variations in length of follow-up, study design, analysis methods, and definitions of AKI and renal recovery precluded meta-analysis.

Conclusion:

The limited evidence suggests that BMI may not influence 90-day renal recovery; however, the impact of BMI on CKD incidence and progression outcomes remain unknown. Findings suggest that a higher BMI may have a beneficial effect on survival after an episode of AKI at 90 days and 6 months though not at 1 year, suggesting the length of follow-up is critical in determining the effect of BMI on survival. Future AKI studies should report BMI to determine if it contributes to the adverse long-term consequences of AKI.