Acute kidney injury (AKI) and renal complications in general complicates recovery in up to 30% of patients following cardiac surgery.\(^1\) AKI requiring renal replacement therapy occurs in 2 – 5% of patients following cardiac surgery ans is associated with a mortality rate of 50%. There is wide regional and national variation in rates of renal complications after cardiac surgery with limited synthesized evidence for strategies to optimize the prevention of AKI.

Pharmacologic and CPB strategies have demonstrated wide variability in their effectiveness to prevent renal complications after cardiac surgery. The field is in need of a high quality multidisciplinary synthesis and recommendations on what pharmacological and CPB strategies reduce the risk of renal complications, and which ones may increase risk. There are numerous approaches for minimizing renal complications by use of CPB circuits, circuit size and coating, as well as other pump-related adaptations including pulsatile flow that require investigation and synthesis of the evidence.

Therefore, the Society of Thoracic Surgeons (STS), Society of Cardiovascular Anesthesiologists (SCA), and the American Society of Extracorporeal Technology (AmSECT) collaborated to develop evidenced-based clinical practice guidelines to identify strategies to minimize the incidence of AKI after cardiac surgery. The multidisciplinary taskforce synthesized the evidence for renal preventive strategies using the same methodology previously used to develop clinical practice guidelines.\(^2,3\) In short, systematic reviews and scoring of the literature were conducted and recommendations generated regarding strategies to reduce the risk of AKI after adult cardiac surgery. In addition, these systematic reviews highlighted gaps in the scientific literature and areas where further scientific investigation was needed.

Specifically, the taskforce synthesized and scored the evidence in 4 topic areas: 1) pharmacologic strategies, 2) fluid management and transfusion, 3) cardiopulmonary bypass management (CPB), and 4) targeted strategies (e.g., remote ischemic preconditioning and prophylactic dialysis). When there was a sufficient number of published randomized controlled trials focused on a preventive strategy the taskforce conducted systematic meta-analyses of the evidence and included in the guidelines.

This presentation will summarize the initial work of this multi-disciplinary and mutli-societal taskforce.

**References:**
