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### **Incidence of renal failure after cardiac surgery: An update**

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Acute renal failure after cardiac surgery is a serious complication that is closely associated with post-operative morbidity and mortality. In previous studies that evaluated risk factors for acute renal failure, most of the identified risk factors were not modifiable (e.g., diabetes mellitus, pre-existing kidney disease). In this present single center study of 1000 adult patients undergoing cardiac surgery in 2015, we focused on identifying potentially modifiable risk factors for post-operative acute renal failure. We found that acute renal failure, as defined by consensus-based criteria (25%, 50% and 75% decrease in estimated glomerular filtration rate or need for dialysis within 1-week of surgery), was independently associated with a 4-fold increase in death rates. Three common and potentially modifiable variables (pre-operative anemia, red blood cell transfusions and surgical re-exploration) were highly associated with acute renal failure, even after adjustment for other perioperative risk factors (e.g., preoperative intra-aortic balloon pump, cardiopulmonary bypass duration). Given these results, we propose that randomized trials are now needed to determine whether interventions that modify these risk factors might also prevent Acute renal failure after cardiac surgery. Cox regression was used to correct for various established demographic preoperative risk indicators, intraoperative parameters and postoperative complications. Acute renal failure after cardiac surgery is highly prevalent and prognostically important. Therapies aimed at mitigating preoperative anemia, perioperative red blood cell transfusions and surgical re-exploration may offer protection against this complication.

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