

Post renal transplant acute myocardial infarction

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ABSTRACT

Background: Renal transplant recipients (RTR) have a comparatively lower risk of acute myocardial infarction (AMI) than wait-list patients. Cardiovascular diseases especially AMI are the leading cause of morbidity and mortality in post-renal transplant patients.^{1,4} They account for up to 50% of the deaths in RTR. The incidence of AMI in RTR is about 0.2% but it is on the rise. Meticulous pre-operative assessment of cardiac status, appropriate pre-operative cardiac management, and post-operative cardiac monitoring will prevent mortality.² Recently it has been emphasized and there is ample evidence to use cardiac troponins from day zero in the post-operative period to diagnose peri-operative cardiac events like AMI.³ We report a case of post-operative myocardial infarction in a live renal donor transplant patient. This case report will serve to increase the awareness of the cardiovascular event in RTR.

Case Report: A 62-year-old obese male patient known to have Type II diabetes mellitus, dyslipidemia, hypertension, end-stage renal disease (ESRD) on peritoneal dialysis, presented for live non-related donor renal transplant. In the pre-operative evaluation, his comorbidities were well controlled. His electrocardiogram (ECG) was normal and an echocardiogram revealed left

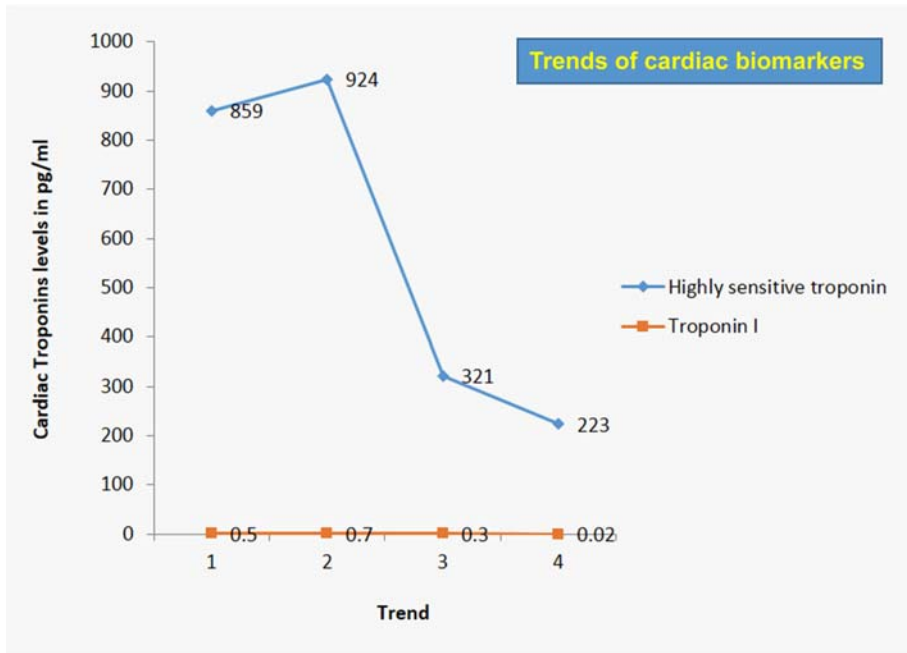


Figure 1. Trends of cardiac biomarkers.

ventricular enlargement and grade 1 diastolic dysfunction. Induction of anesthesia and intra-operative periods were smooth and he remained hemodynamically stable. The patient did not consent for epidural catheter insertion. Intra-operatively his iliac arteries showed multiple plaques, and his renal vessels were anastomosed with difficulty. After a 6-hour surgery, he was admitted to the surgical intensive care unit (SICU) sedated, intubated, and ventilated.

In SICU initially, his hemodynamics were stable, passing 20 to 30 ml of urine per hour, and started on 100% renal replacement with IV Ringer’s Lactate. The central venous pressure was between 12 to 14 mmHg. He was rapidly weaned from the ventilator and extubated after 8 hours. Post-extubation, he was awake, stable, and resumed his oral medications.

On day 2, during physiotherapy, he complained of shortness of breath and developed severe bradycardia (24 beats/minute). Twelve-lead ECG showed ST-segment depression in the anterior-lateral leads. Within a few minutes, he went into cardiac arrest requiring CPR (cardio-pulmonary resuscitation) for 1 minute. Cardiac biomarkers were elevated (Figure 1) and chest x-ray showed pulmonary congestion (Figure 2).

An echocardiogram revealed left ventricular ejection fraction of 58% and mild hypokinesia of the anterior wall. CT coronary angiogram or conventional coronary angiogram was not done to avoid contrast induced injury to the transplanted kidney.

He was started on aspirin and heparin infusion. His newly grafted kidney was functioning well and he was passing 50-100 ml of urine per



Figure 2. Chest X-ray showing pulmonary congestion.

hour. He was hemodynamically stable and transferred to the ward on day three. From there, he was discharged home and followed in the transplant and cardiac outpatient clinics. After three months of follow-up, his kidney was functioning well and his echocardiogram became normal.

Conclusion: RTR are at greater risk of cardiovascular events, particularly AMI though significantly less than the wait-list patients. Cardiac troponins should be monitored in the post-operative period as

early detection of acute coronary syndrome improves their outcome.³

Keywords: Post renal transplant, perioperative myocardial infarction, preoperative cardiac evaluation

Ethical approval

The publication of this case report has been approved by the Hamad Medical Corporation Medical Research Center (MRC-04-19-208).

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