

## Outcomes of cardiac surgery in patients with end stage renal disease – Insights from the Israel national registries

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**Background:** End-stage renal disease (ESRD) has been shown to be associated with increased mortality in patients undergoing cardiac surgery. We aimed to compare the short-and mid-term mortality after cardiac surgery of patients with dialysis-dependent ESRD (DD-ESRD) to patients with normal renal function (NRF), using national registries: the ESRD registry, the Adult Cardiac Surgery Registry (ACSR) and the National Mortality Registry.

**Methods:** The study population comprised 8514 adult patients who underwent either isolated Coronary Artery Bypass Grafting (CABG), isolated Aortic valve replacement/repair (AVR/Avr), isolated Mitral valve replacement/repair (MVR/MVr), or CABG + valve related procedure, between January 2017 and April 2019. Data were retrospectively extracted and reported to the ACSR by the department of medical records of each medical center.

**Results:** One hundred and four DD-ESRD patients (mean age  $63.2 \pm 8.8$  years, 83.7% males) were compared with 8410 NRF patients (mean age  $64.5 \pm 10.2$  years, 77.2% males). Median follow-up for the total cohort was of 32.0 months (IQR; 25.0-40.0). In DD-ESRD compared to NRF patients, 30-day mortality was higher (14.4% vs. 2.2%, respectively,  $p=0.0001$ ) and four-year survival was significantly lower ( $43\% \pm 5.0$  vs.  $91\% \pm 4.0$ , respectively,  $p=0.0001$ ). Fifty three percent of DD-ESRD 30-day mortality was caused by sepsis. Risk factors associated with reduced mid-term survival included: DD-ESRD patients (HR=4.7, 95%CI; 1.3-18.2), MVR procedure (HR=1.5, 95%CI; 1.04-2.1) and combined CABG + valve related procedure (HR=1.6, 95%CI; 1.2-2.03).

**Conclusions:** Preoperative DD-ESRD was associated with a significant increase in 30-day and mid-term mortality after cardiac surgery. The highest mortality rate was observed in valvular and combined procedures.