**The dataset represents data from the study by Argalious et al. “Association between preoperative statin therapy and postoperative change in glomerular filtration rate in endovascular aortic surgery”. *British Journal of Anaesthesia* 2012; 109 (2): 161–7.**

**Dataset: Glomerular Filtration Rate (GFR)**

Acute kidney injury (AKI) occurs in 1–5% of the patients having non-cardiac surgery and contributes to increased hospital morbidity. In patients undergoing endovascular aortic repair, the incidence of AKI has been reported as 7%. The predominant mechanism of perioperative AKI is thought to be impaired perfusion; the initial insult appears to be hypoxic, followed by the production of reactive oxygen species and the activation of inflammatory mechanisms during reperfusion. In endovascular aortic repair, additional causes of AKI include contrast-induced nephropathy, emboli to the renal vessels, or encroachment of the vascular stents on renal vessels.

Statins reduce vascular events and death in hypercholesterolaemic patients and in patients with coronary artery disease. In addition to their cholesterol-lowering effects, statins reduce endothelin secretion and rapidly increase nitric oxide production, thereby increasing flow mediated vasodilation and endothelial function. Statins also scavenge free radicals, are anti-inflammatory, and possess antithrombotic properties—all of which are likely to be protective to the kidney. We thus tested the hypothesis that in patients undergoing endovascular aortic repair, the glomerular filtration rate (GFR, a measure of kidney function) decreases less in patients taking preoperative statins than in those who do not.

This study included adults who had endovascular aortic repair at the Cleveland Clinic, whether abdominal or thoracic, between June 2005 and March 2007. Patients with pre-existing renal failure (as defined by requiring dialysis) and repeat endovascular aortic repair operations were excluded. 501 consecutive patients were identified, but 13 patients were removed due to missing serum creatinine measurements (n = 9), missing statin use data (n = 5), or both, leaving data from 488 patients available for analysis.

The primary outcome was postoperative GFR (after adjusting for a preoperative GFR as a covariable). This study also evaluated the incidence of a decrease in the GFR of .25% as a secondary endpoint, as this reduction in the GFR is used to define contrast nephropathy.