Objective(s): Renal dysfunction is a well-described complication of open juxtarenal abdominal aortic aneurysm repair, but risk factors and corresponding impact on survival are not well described.

Methods: We identified all patients not on hemodialysis (HD) undergoing open repair of nonruptured juxtarenal aneurysms in the VQI from 2003-2017. We used mixed effects logistic regression to determine factors associated with in-hospital postoperative renal dysfunction including acute kidney injury (AKI: serum creatinine increase>0.5mg/dL), and new renal
replacement therapy (RRT). We also determined the association between postoperative renal function and both perioperative and long-term mortality.

**Results:** We identified 2,635 open juxtarenal repairs, of which 621 (24%) were complicated by AKI. The majority of these (20%) were AKI alone, but 2.2% required temporary RRT and an additional 1.7% were permanently dialysis-dependent. Factors independently associated with postoperative renal dysfunction included renal-vascular ischemia time (per minute: OR 1.01 [1.01-1.02], P<.001), clamp site (above both renal arteries: OR 1.4 [1.1-1.8], P=.02; supraceliac: OR 1.7 [1.1-2.5], P=.01), statin use (OR 1.5 [1.1-2.0], P=.01), male sex (OR 1.7 [1.2-2.2], P=.002), and preoperative renal function (GFR 45-60: OR 1.8 [1.3-2.5], P<.001; GFR 30-45: OR 1.9 [1.2-2.8], P=.003; GFR<30: OR 6.2 [3.1-12.2], P<.001). There was no difference in risk of postoperative renal dysfunction until clamp times exceeded 25 minutes, but risk increased stepwise thereafter (25-39 minutes: OR 1.6 [1.2-2.1], P=.004; 40+ minutes: OR 2.6 [1.9-3.5], P<.001). Neither mannitol nor the use of cold renal perfusion were associated with renal complications or mortality in the overall cohort, but cold renal perfusion was associated with lower risk of AKI when clamp times exceeded 25 minutes (OR 0.4 [0.2-0.97], P = .041). Postoperative renal dysfunction was associated with higher adjusted perioperative mortality (AKI: OR 2.6 [1.4-5.0], P<.01; RRT: OR 10.5 [4.0-27.6], P<.001), and long-term mortality (AKI: HR 1.5 [1.0-2.1], P=.049; RRT: HR 5.8 [3.2-10], P<.001)(Figure).

**Conclusions:** Postoperative renal dysfunction, even a mild elevation in creatinine, is associated with higher perioperative and long-term mortality. Although the routine use of mannitol and cold renal perfusion were not associated with postoperative renal dysfunction, cold renal perfusion was associated with lower risk of AKI if clamp times exceeded 25 minutes.

**Figure.** Long-Term Adjusted Survival. P < 0.05, all standard errors < 0.1

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**Author Disclosure Block:**
Abstract Body:
Objective(s): FEVAR has emerged as an alternative to open repair for treatment of complex abdominal aortic aneurysms (cAAA), but direct comparisons between the two repair types are limited.
Methods: We studied all repairs of non-ruptured cAAA in the VQI between 2012-2017 (pararenal or juxtarenal aneurysms for FEVAR, and a clamp above at least one renal artery for open repairs). Only FEVAR (off-the-shelf or custom-manufactured) or physician-modified endografts (PMEG) were included. As a secondary analysis we considered PMEG separately. As an additional secondary analysis, we calculated propensity scores for the likelihood of undergoing open repair versus FEVAR, and used them to construct inverse probability weights.