



We investigated whether preoperative intravenous hydration with 0.9% normal saline could prevent postoperative AKI” Serrano et al (2016).

Abstract:

**BACKGROUND:** Postoperative acute kidney injury (AKI) is the second leading cause of hospital-acquired AKI. Although many preventive strategies have been tested, none of them has been totally effective.

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**OBJECTIVE:** We investigated whether preoperative intravenous hydration with 0.9% normal saline could prevent postoperative AKI.

**DESIGN:** Open prospective randomised controlled trial.

**SETTING:** University Ramón y Cajal Hospital, Spain, from June 2006 to February 2011.

**PATIENTS:** Total 328 inpatients scheduled for major elective open abdominal surgery.

**INTERVENTION:** 0.9% normal saline at a dose of 1.5 ml/kg/h for 12h before surgery.

**MAIN OUTCOME MEASURES:** The primary outcome was the overall postoperative AKI incidence during the first week after surgery defined by risk, injury, failure, loss, end-stage kidney disease (RIFLE) and AKI network (AKIN) creatinine criteria. Secondary endpoints were the need for ICU admission, renal replacement therapy during the study period and adverse events and hospital mortality during hospital admission.

**RESULTS:** There was no difference in the incidence of AKI between groups: 4.7% in the normal saline group versus 5.0% in the control group and 11.4% in the 0.9% normal saline group versus 7.9% in the control group as assessed by the RIFLE and AKIN creatinine criteria,

respectively. Absolute risk reductions (95% confidence interval) were -0.3% (-5.3 to 4.7%) for RIFLE and 3.5% (-10.2 to 3.6%) for AKIN. ICU admission after surgery was required in 44.5% of all participants. Only 2 (0.7%) patients required renal replacement therapy during the first week after surgery. The analysis of adverse events did not show statistically significant differences between the groups except for pain. In our population, 8 (2.4%) patients died during their hospital admission.

**CONCLUSION:** Intravenous hydration with 0.9% normal saline before major open abdominal surgery was not effective in preventing postoperative AKI. No safety concerns were identified during the trial.

**TRIAL REGISTRATIONS:** Clinical trials.gov: NCT00953940 and EUDRA CT: 2005-004755-35.

Reference:

Serrano, A.B., Candela-Toha, A.M., Zamora, J., Vera, J., Muriel, A., Del Rey, J.M. and Liaño, F. (2016) Preoperative hydration with 0.9% normal saline to prevent acute kidney injury after major elective open abdominal surgery: A randomised controlled trial. *European Journal of Anaesthesiology*. January 27th. .

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