

# OUABAIN AS EARLY MARKER OF ACUTE KIDNEY INJURY

**Marta De Filippo**<sup>a,\*</sup>, Lorenzo Cocchini<sup>a</sup>, Matteo Matteo<sup>a</sup>, Davide Raimondo<sup>a</sup>, Chiara Lanzani<sup>b</sup>, Elisabetta Messaggio<sup>b</sup>, Lorena Citterio<sup>b</sup>, Laura Zagato<sup>b</sup>, Giuseppe Vezzoli<sup>a</sup>, Paolo Manunta<sup>a</sup>, Marco Simonini<sup>b</sup>, a Vita Salute San Raffaele University, Milan; b San Raffaele Hospital, Milan.

Acute kidney injury (AKI) is a common post-cardiac surgery complication. Recent studies reported endogenous ouabain (EO), a stress hormone secreted by the adrenal glands, as associated to worse kidney outcomes after cardiac surgery.

## OBJECTIVES

- Validate the use of endogenous ouabain (EO) as biomarker of susceptibility for AKI in a cohort of 1174 patients undergoing elective cardiac surgery
- Create a powerful score for postoperative AKI risk.

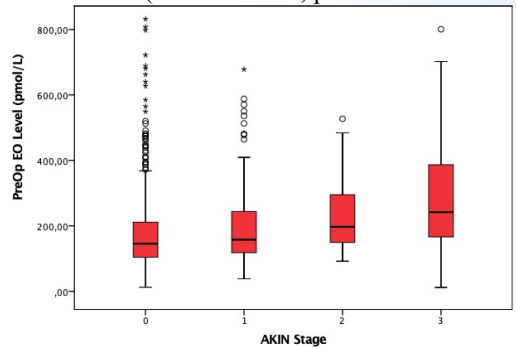
## METHODS

- The primary outcome was AKI development.
- Preoperative blood samples were collected to evaluate EO basal levels.
- Different preoperative clinical variables were analysed, among which classic anthropometric variables, comorbidity and surgery-connected variables

## RESULTS

AKI was developed in 21.6% of patients and it is significantly correlated to preoperative EO levels in plasma (p-value < 0.001). A significant association was also found among EO and cardiac and kidney basal function (EF and eGFR, p-value = 0.005 and p-value = 0.003, respectively).

Five independent risk factors turned out to be significantly correlated to AKI: age, FE, NYHA class, reoperation and complex surgery. A clinical predictive model for AKI, including those clinical variables and EO, was developed: AUC = 0.82, 95% CI 0.771-0.858 (p-value < 0.001).



## CONCLUSIONS

EO preoperative level in plasma seems to be an important predictor for post-surgical acute kidney injury.

A valid predictor model of post-operative AKI obtained by combining a few clinical factors and pre-operative level of EO results in better patient stratification and more effective pre-operative counselling.

