

Authors' response to a letter to the Editor from Zhu *et al.* re: Urinary sodium potassium ratio is associated with clinical success after adrenalectomy in patients with unilateral primary aldosteronism

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We would like to thank Zhu *et al.* for their interest in our paper¹ and for taking time to express their concerns.

In their letter to the Editor, they alleged that the post-operative plasma aldosterone concentrations [PAC; 28.5 ng/dl, interquartile range (IQR): 20.3–41.1] found in our adrenalectomized unilateral primary aldosteronism (uPA) patients were much higher than 5 ng/dl, the so-called 'cut-off' proposed in the Primary Aldosteronism Surgical Outcome (PASO) consensus² to define the biochemical success.

Actually, according to the main definition of PASO consensus, the complete biochemical success was defined as normalization of hyperkalemia (if present pre-operatively) and normalization of the aldosterone-to-renin ratio (<30 ng/dl per ng/ml per h in our center) after surgery.² In our patients, the median of post-operative aldosterone-to-renin ratio (ARR) was 18.74 ng/dl (IQR: 8.61–47.66), which was much less than our cut-off ARR of 30, and the post-operative PAC of 28.5 ng/dl has been a significant decrease from our pre-operative average PAC of 45.6 ng/dl. The confusion that Zhu *et al.* wrongly accused was because of their 'partial quotation'— according to the original paper, only in patients with a raised aldosterone-to-renin ratio post surgery, aldosterone secretion should be suppressed in a confirmatory test, and the criteria of (normal suppression) is defined as: 'plasma aldosterone <5 ng/dl (139 pmol/l), from a saline infusion test'.²

Zhu *et al.* also mentioned that the daily sodium intake (daily urine sodium excretion) of uPA

patients without clinical success was more than 10% higher than in the patients with clinical success and, thus, the sodium intake should be taken into consideration when searching for predictors of clinical outcome.

However, the truth is that since we already put the urinary sodium potassium (NaK) ratio as an independent variable for predicting clinical success of adrenalectomy in the logistic regression, we did not further add urinary sodium (which was in turn affected *via* daily sodium intake) in order to avoid the possibility of collinearity.

We agree with Zhu that we did not take some important factors, such as anti-hypertensive drugs burden and vascular remodeling, into consideration while searching predictors in logistic regression. However, the urinary biochemistry data were obtained after holding drugs that would interfere with the renin-angiotensin system for at least 21 days. As for the duration of hypertension, we did not include this factor in the logistic regression analysis because the duration of hypertension between patients with and without clinical success was not significantly different.

Last, we acknowledged that the area under the curve of the urinary NaK ratio as a predictor of the clinical outcome was not optimal; this was the limitation of our study, but the most important thing, as we stated in the text, is its high accuracy and sensitivity. We believed that urinary NaK ratio, as an easily accessible marker, could be helpful while predicting the surgical outcome.

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References

1. Lee MJ, Sun CY, Lu CC, *et al.* Urinary sodium potassium ratio is associated with clinical success after adrenalectomy in patients with unilateral primary aldosteronism. *Ther Adv Chronic Dis* 2021; 12: 2040622321990274.
2. Williams TA, Lenders JWM, Mulatero P, *et al.* Outcomes after adrenalectomy for unilateral primary aldosteronism: an international consensus on outcome measures and analysis of remission rates in an international cohort. *Lancet Diabetes Endocrinol* 2017; 5: 689–699.

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