



Contralateral Suppression at Adrenal Venous Sampling Is Associated with Renal Impairment Following Adrenalectomy for Unilateral Primary Aldosteronism (*Endocrinol Metab* 2021;36:875-84, Ye Seul Yang et al.)

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Primary aldosteronism (PA) is characterized by the overproduction of aldosterone, which is independent of the renin-angiotensin-aldosterone system. PA has been shown to be more prevalent among the elderly. Prolonged exposure to excessive aldosterone and mineralocorticoid receptor overactivation leads to renal vascular remodeling and structural damage, posing a high risk of chronic kidney disease (CKD). PA has also demonstrated correlations with cardiovascular events and metabolic syndrome, greatly impacting the prognosis and quality of life in the elderly population, and even increasing the risk of death.

The 2020 European Society of Hypertension Consensus has indicated that adrenalectomy, which relieves aldosterone overexposure, is the preferred treatment for unilateral PA. However, the elderly population is characterized by complicated primary diseases and is susceptible to postoperative complications. Consequently, multiple evaluations are required to determine the risks and benefits of adrenalectomy in the elderly. This leads to a question: in comparison with non-elderly patients, what are the differences in postoperative renal outcomes in the old? With

great interest, we read Yang's article published in *Endocrinology and Metabolism*, which found that age was associated with postoperative CKD in PA patients (odds ratio [OR], 1.04; 95% confidence interval [CI], 1.00 to 1.08) [1].

To further investigate the relationship between age and postoperative CKD in PA patients, we conducted a meta-analysis of six studies including 629 participants (Supplemental Fig. S1) [1-6]. Similar to Yang's study, we also found a positive association between age and postoperative CKD (OR, 1.05; 95% CI, 1.02 to 1.09; $P=0.001$; $I^2=13.6\%$). Five of the included studies defined postoperative CKD as an estimated glomerular filtration rate (eGFR) <60 mL/min/1.73 m², while one defined it as <45 mL/min/1.73 m². To avoid heterogeneity in the results due to different definitions, we further performed a subgroup analysis by CKD definition and found that the positive association between age and postoperative CKD remained significant in the subgroup of eGFR <60 mL/min/1.73 m² (OR, 1.05; 95% CI, 1.02 to 1.09; $P<0.001$; $I^2=22.1\%$).

Notably, in the subgroup with an eGFR <60 mL/min/1.73 m²,

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the mean age was 49.1 ± 10 years, while in the subgroup with an eGFR <45 mL/min/1.73 m², the population was older than 65 years. An eGFR below 60 mL/min/1.73 m² indicates that an individual has lost at least 50% of his or her renal function compared to a healthy status, and this cutoff is often used to determine CKD. However, in the elderly, eGFR decreases physiologically with age, and the above threshold may overestimate the CKD burden. Therefore, it seems reasonable to regard an eGFR <45 mL/min/1.73 m² as an observable indicator of CKD in the elderly population. However, in 2021, Liu et al. [7] conducted a cohort study including 127,132 people, and found that elderly patients (>65 years) with an eGFR <60 mL/min/1.73 m² had a higher risk of renal failure and death. Therefore, we wonder whether an eGFR <60 mL/min/1.73 m² might be more appropriate as the observed outcome.

Research on the correlation between age and postoperative CKD in PA patients holds great potential. High-quality research is needed to further validate the association between various age groups and different stages of postoperative CKD in PA patients.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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