



Implication of urine aquaporin-2 levels following cardiac surgery

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To the editor

In addition to the renin-angiotensin-aldosterone system and the sympathetic nerve system, the arginine vasopressin system is receiving great concern as a therapeutic target in patients with cardiovascular disease. Fujii and colleagues demonstrated that both plasma arginine vasopressin and urine aquaporin-2 levels were elevated immediately after the surgical aortic valve replacement [1]. Both variables had a positive correlation with each other. They hypothesized that a urine aquaporin-2 level might be a potential biomarker of perioperative cardiac dysfunction. Several concerns should improve the implication of their findings.

Our team previously demonstrated that a reduced excretion of urine aquaporin-2 relative to plasma arginine vasopressin level might indicate impairment of kidney collecting duct [2]. Urine aquaporin-2 level may not be a good tool to assess cardiac function in patients with advanced chronic kidney disease, although such patients were not included in their study [1].

Second, our team could not demonstrate the implication of peri-procedural plasma arginine vasopressin level on clinical outcomes following trans-catheter aortic valve

replacement, probably due to relatively maintained peri-procedural hemodynamics in most patients [3]. Urine aquaporin-2 level might be useful particularly for the patients with relatively deteriorated hemodynamics including low-flow low-gradient aortic valve stenosis or decompensated heart failure.

References

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