

# Letter to the Editor: Intraoperative renal hypoxia and risk of cardiac surgery-associated acute kidney injury

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## *Title Page:*

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**Letter:**

Dear editor,

It was an enormous delight to read the article "Intraoperative renal hypoxia and risk of cardiac surgery-associated acute kidney injury" by Jennifer P. Ngo et Al.<sup>1</sup> The author's endeavors are admired concerning this important topic and need to be acknowledged by the readers. We agree with the conclusion of the study

that urinary oxygen tension (UPO<sub>2</sub>) strongly predicts renal injury post-cardiac surgery. In contrast, plasma erythropoietin (pEPO) does not show an association with renal injury. However, few concerns have been interrupting the validity of the study.

Firstly, as well known, viscosity is associated with decreased supply of blood to the organs and therefore causes hypoperfusion of the organs and ischemia resulting in organ damage. Therefore the authors should have included hemodilution as one variable since hemodilution decreases the viscosity. For example, a 2006 study included hemodilution as one of the steps in the surgical procedure and found out hemodilution increases the risk of renal injury.<sup>2</sup> Additionally, not including participants from different demographics has been found to be associated with the difference in the study's outcomes. For illustration, a study in 2008 included black and white participants that strengthened their study and supported their findings.<sup>3</sup>

Moreover, this study's small sample size could alter the authenticity of the study's outcomes. This is why the authors should have opted to include a large number of participants. For example, a 2011 study included 1219 participants in their study, which increased their study's efficacy.<sup>4</sup> Lastly, the authors should also have looked for additional laboratory values of endotoxins and elevated levels of tumor necrosis factor-alpha. They should have excluded the use of some nephrotoxic drugs and nonsteroidal anti-inflammatory drugs because of their strong relation to causing injury to the kidney. For illustration, a study in 2012 found a positive association of their factors with renal injury.<sup>5</sup>

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