

Topic	Mechanisms of AKI-on-CKD
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<p>Existing chronic kidney disease (CKD) is among the most potent predictors of postoperative acute kidney injury (AKI). Hypoxia is a final common pathway to end stage kidney disease in CKD and is an important mediator of AKI. Furthermore, renal hypoxia aggravates oxidative stress, and elevated oxidative stress, in turn, exacerbates renal hypoxia. Oxidative stress is also enhanced in CKD through various mechanisms. Thus, the vicious cycle between oxidative stress and renal hypoxia critically contributes to AKI-on-CKD.</p> <p>References</p> <p>Honda T, Hirakawa Y, Nangaku M. The role of oxidative stress and hypoxia in renal disease. <i>Kidney Res Clin Pract.</i> [Epub ahead of print]</p> <p>Hirakawa Y, Tanaka T, Nangaku M. Renal Hypoxia in CKD; Pathophysiology and Detecting Methods. <i>Front Physiol.</i> 2017 Feb 21;8:99</p> <p>Tanaka S, Tanaka T, Nangaku M. Hypoxia as a key player in the AKI-to-CKD transition. <i>Am J Physiol Renal Physiol.</i> 2014 Dec 1;307(11):F1187-95</p> <p>Shoji K, Tanaka T, Nangaku M. Role of hypoxia in progressive chronic kidney disease and implications for therapy. <i>Curr Opin Nephrol Hypertens.</i> 2014 Mar;23(2):161-8</p> <p>Tanaka T, Nangaku M. Angiogenesis and hypoxia in the kidney. <i>Nat Rev Nephrol.</i> 2013 Apr;9(4):211-22</p> <p>Mimura I, Nangaku M. The suffocating kidney: tubulointerstitial hypoxia in end-stage renal disease. <i>Nat Rev Nephrol.</i> 2010 Nov;6(11):667-78</p> <p>Nangaku M. Chronic hypoxia and tubulointerstitial injury: a final common pathway to end-stage renal failure. <i>J Am Soc Nephrol.</i> 2006 Jan;17(1):17-25</p>	