



NephroCheck

The Urgency of Acute Kidney Injury

Kidneys are crucial

Kidneys perform the life-sustaining function of filtering and returning approximately 200 quarts of fluid to the bloodstream every 24 hours.¹ **Acute kidney injury (AKI) is a sudden loss of kidney function that occurs over hours to days. It can lead to chronic kidney disease, kidney failure requiring dialysis, heart disease or death.**²

AKI is a familiar danger

AKI strikes up to 18 percent of all hospitalized patients,³ 39 percent of all post-operative patients⁴ and up to 50 percent of all critically ill patients.⁵ It will often occur in hospital patients as a complication of surgery, infection, trauma, sepsis and/or the use of drugs that are toxic to the kidneys.⁶ In a study of cardiac surgery patients, 46 percent of the patients who were evaluated developed moderate to severe AKI.⁷

AKI is a costly health burden

It has been estimated that annual U.S. healthcare expenditures for hospital-acquired AKI could exceed \$10 billion.⁸

When AKI strikes, everything is two to three times worse

If a patient develops AKI during hospitalization, patient length of stay, cost of care and readmission rates can be at least two times higher than in non-AKI cases.^{7,9} AKI is also associated with a ten-fold increase in hospital mortality rates among post-surgery patients.³

AKI is difficult to identify

AKI is silent, lacking signs and symptoms useful for risk assessment.¹⁰ Delays in recognizing AKI can lead to irreversible consequences,³ but if the condition is recognized and managed in a timely fashion unfavorable patient outcomes can be avoided.¹¹

Traditional methods are insufficient for timely diagnosis

The 2009 UK National Confidential Enquiry into Patient Outcomes and Death (NCEPOD) Adding Insult to Injury study reported that of admitted patients who died from hospital-acquired AKI:

- 31 percent had avoidable AKI;
- 43 percent had an unacceptable recognition delay;
- 54 percent had inadequate risk assessment.¹²

For more information visit NephroCheck.com and [The National Kidney Foundation](#)

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- ¹ How Your Kidneys Work. *National Kidney Foundation*. Available at <https://www.kidney.org/kidneydisease/howkidneyswrk>. [Accessed January 4, 2017]
- ² Acute Kidney Injury. *National Kidney Foundation*. Available at <https://www.kidney.org/atoz/content/AcuteKidneyInjury>. [Accessed January 4, 2016]
- ³ Lewington AJ, Cerdá J, Mehta RL. Raising awareness of acute kidney injury: a global perspective of a silent killer. *Kidney Int*. 2013;84(3):457-467.
- ⁴ Hobson C, Ozrazgat-Baslanti T, Kuxhausen A, et al. Cost and mortality associated with postoperative acute kidney injury. *Ann Surg*. 2014;00:1-8.
- ⁵ Mandelbaum T, Scott DJ, Lee J, et al. Outcome of critically ill patients with acute kidney injury using the AKIN criteria. *Crit Care Med*. 2011;39(12):2659-2664.
- ⁶ Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney inter., Suppl.* 2013; 3:1-150.
- ⁷ Dasta JF, Kane-Fill SL, Durtschi, AJ, Pathak DS, Kellum JA. Costs and outcomes of acute kidney injury (AKI) following cardiac surgery. *Nephrol Dial Transplant*. 2008;23:1970-1974.
- ⁸ Chertow GM, Burdick E, Honour M, Bonventre JV, and Bates DW. Acute kidney injury, mortality, length of stay, and costs in hospitalized patients. *J. Am. Soc. Nephrol*. 2005;16:3365-3370.
- ⁹ Brown JR, Parikh CR, Ross CS, et al. Impact of Perioperative Acute Kidney Injury as a Severity Index for Thirty-Day Readmission After Cardiac Surgery. *Ann Thorac Surg*. 2014;97(1):111-117.
- ¹⁰ Ronco C, Ricci Z. The concept of risk and the value of novel markers of acute kidney injury. *Crit Care*. 2013;17:117-118.
- ¹¹ Mehta RL, Cerdá J, Burdmann EA, et al. International Society of Nephrology's Oby25 initiative for acute kidney injury (zero preventable deaths by 2025): a human rights case for nephrology. *Lancet*. 2015.
- ¹² National Confidential Enquiry into Patient Outcome and Death. Adding Insult to Injury. 2009;1-98.