KDIGO: Whence and Whereto?

By Edgar V. Lerma

In 1995, the National Kidney Foundation spearheaded the development of the first broadly accepted clinical practice guidelines in nephrology, the Kidney Disease Outcomes Quality Initiative (KDOQI).

First published in 1997, these "guidelines" made a significant impact in the quality of care for kidney patients in the United States and across the world.

In 2002, leaders of NKF and KDOQI asked prominent nephrologists from around the world regarding their opinion on the need for a global organization to bring the world's nephrology community more closely together in regard to practice guidelines. This interest in promoting guideline development and implementation subsequently expanded globally and internationally with the establishment of the Kidney Disease: Improving Global Outcomes (KDIGO) in 2003.

The hyperlink below gives a more detailed description of how and why KDIGO was created.

http://www.nature.com/ki/journal/v66/n4/full/4496003a.html

The year 2013 marks the 10th anniversary of KDIGO. In this issue, we invited prominent nephrologists who were part of the team that developed these guidelines to give us the highlights of the currently published Clinical Practice Guidelines.

We also asked two nephrologists, both of whom are actively involved in the clinical and private practice aspects of the specialty, about their insights on the development of these guidelines and their practicality. They give us their interesting perspectives from differing geographic locales.

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Kidney-Sparing Therapy Requires Assessment of Risk

By John A. Kellum

The authors of the Kidney Disease: Improving Global Outcomes (KDIGO) clinical practice guideline for acute kidney injury (1) are often asked two important questions: "Who is the guideline for?" and "Is acute kidney injury (AKI) preventable?"

My answer to the first question is that the guideline is for physicians to aid them in the treatment of patients—but which patients and, for that matter, which physicians? These are fair points, and the KDIGO AKI Work Group spent some time debating them. In the end we decided that the guideline was meant for "front-line" physicians, not just for subspecialists. Indeed, when it comes to prevention and early management of AKI, the physicians who matter most are not necessarily the AKI experts but rather physicians primarily responsible for these patients, whether on the wards, in emergency departments, in operating rooms, or in intensive care units (2).

With regard to the second question, the patients most likely to benefit from the KDIGO guideline include patients who have not received diagnoses of AKI. Why? Because some of the best therapies we have for AKI are actually not therapies at all—they are kidney-sparing interventions like avoiding nephrotoxins and optimizing fluids. This introduces the concept of risk assessment for AKI. Patients are at high risk for AKI when they have one or more susceptibilities (e.g., advanced age, chronic kidney disease (CKD), or critical illness), one or more exposures (e.g., sepsis, hemorrhagic shock, or nephrotoxin exposure), or a combination of these. As with all diseases, the risk for AKI is greatest in susceptible populations who have been exposed to various etiologic factors. AKI does not arise without an exposure, even in highly susceptible patients, but it may occur even in those with low susceptibility if the exposure is great. Conversely, even a small exposure may be enough in a highly susceptible patient. For example, a young trauma patient may have been exposed to prolonged hemorrhagic shock, intravenous contrast medium, and resuscitation with hydroxyethyl starch but never manifest AKI. By contrast, an elderly patient with diabetes and CKD may experience AKI with exposure to even "non-severe" pneumonia (3).

The KDIGO guideline discusses several potentially kidney-sparing steps that can be initiated in high-risk patients: 1) discontinue potentially nephrotoxic agents whenever possible (this includes finding alternatives to radiocontrast medium and a variety of drugs that pose some risk for AKI when other viable alternatives exist); 2) ensure volume status and perfusion pressure (this may require echocardiography or various other forms of functional hemodynamic monitoring); and 3) avoid hyperglycemia. The guideline also recommends that high-risk patients receive careful monitoring of serum creatinine and urine output. I would add to these recommendations that consultation with an AKI specialist should be considered for high-risk patients.

Importantly, all of these kidney-sparing steps first require a physician to determine which patients are indeed at high risk. This determination will not be difficult in some cases (multiple susceptibilities and exposures versus no susceptibilities with only limited exposure). However, for many patients significant clinical judgment is required. Unfortunately, there are no proven methods for the precise determination of risk in a specific patient, so it remains a clinical decision. The concept of renal angina (4) is one attempt to identify high risk and several biomarkers are being evaluated as potential aids in this process, but none have yet been approved.

Above all, it is the hope that the KDIGO clinical practice guideline for AKI will prompt all physicians to consider not only the diagnosis of AKI but whether patients exposed to various factors that can cause AKI (especially sepsis) are at high risk for the development of this disorder. Once risk is assessed, kidney-sparing measures can be considered.

References

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