Letter

RIFLE and AKIN - maintain the momentum and the GFR!

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See related review by Cruz *et al*., http://ccforum.com/content/13/3/211

Cruz and colleagues [1] have called appropriately for a reappraisal of RIFLE and AKIN and have thoughtfully detailed many of the issues with these progressive consensus definitions of acute kidney injury (AKI) and with the ways in which they have been applied. They see the elimination of the glomerular filtration rate (GFR) criteria from the AKIN definition as serendipitously discouraging the incorrect use of changes in estimated GFR for AKI diagnosis. We note that it also serendipitously removed the errors in degree of GFR change of the RIFLE R and F criteria definitions compared to the percentage change in creatinine [2]. Nevertheless, we would argue that further refinement of AKI definitions should allow for optional measured changes in GFR to await the possibility that real-time measures of GFR become available. After all, creatinine is merely a surrogate marker for GFR and a poor one at that. Furthermore, the incremental 'creatinine creep' type of AKI (0.1 mg/dl/day) illustrated by the authors might then be quickly revealed as incremental injury and loss of GFR.

We concur that integration of novel biomarkers into the consensus definition is desirable when these biomarkers identify specific types and severity of injury (as opposed to change in function) and essential when they have been demonstrated to predict hard outcomes (such as dialysis or death). A definition of AKI that incorporated both evidence of cellular injury and change in function might allow better clinico-pathological correlation and eliminate staging uncertainty, for example, that associated with a decreasing versus an increasing creatinine.

Authors response

Dinna N Cruz, Zaccaria Ricci and Claudio Ronco

Drs Pickering and Endre called for optional use of changes in measured GFR in AKI definitions. As they correctly noted, we would like to discourage the erroneous yet widespread use of the change in estimated GFR to define AKI. In their commentary, they also note that the removal of the GFR criteria from RIFLE/AKIN will reduce misclassification arising from the lack of correspondence between the change in GFR and change in serum creatinine [2].

An essential feature of a good working definition is that it should be easy to understand and apply in a variety of clinical and research settings. We agree that when real-time measures of GFR become available for routine clinical use they will contribute to a more precise definition of AKI. Unfortunately, measuring true GFR is still cumbersome and, therefore, not part of routine clinical practice today. Although we concur that an AKI definition incorporating both 'evidence of cellular injury and change in renal function' would be highly desirable, they are not indispensable for a clinical definition that is both practical and usable at the bedside, as experience with sepsis [3] and acute respiratory distress syndrome/acute lung injury [4] consensus definitions has shown us. Furthermore, the fact that the original consensus definition [5] remains one of the most highly accessed medical articles and is used in over 40 studies [6] confirms that there is a strong need for such a consensus, albeit with its limitations.

The AKI consensus definition is dynamic in nature. When, in the future, conclusive data on novel biomarkers (or combinations thereof) and routine real-time GFR measures emerge, these will be used for further improvement of the definition, and additional studies will be necessary to validate the incremental usefulness of these revisions.

AKI = acute kidney injury; GFR = glomerular filtration rate.

Competing interests

The authors declare that they have no competing interests.

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