# Acute kidney injury diagnosis in Intensive Care Units: biomarkers or Information?

## Diagnóstico da injúria renal aguda em terapia intensiva: biomarcadores ou informação?

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## Abstract

In recent years, the diagnosis of acute kidney injury (AKI) has been based on classifications such as RIFLE, AKIN and KDIGO, which has the goal of world standardization and timely recognition of the disease. It is essential that intensivists be aware about these classifications, because most of the time, they will have the first opportunity to diagnose AKI. However, it is still very common that the nephrologist consultation be performed in advanced stages of the AKI, when the interventions to halt the progression are very limited. We recently assessed intensivist on AKI diagnostic criteria, with emphasis on RIFLE, and observed a very low level of knowledge and lack of use in daily practice. Faced with the constant search for new biomarkers of kidney injury, these and other evidences, highlights the urgency of simple actions, such as the beginning of educational interventions in order to familiarize the intensivist with the latest clinical tools for AKI diagnosis.

**Keywords:** acute kidney injury; early diagnosis; intensive care units.

## Resumo

Nos últimos anos, o diagnóstico da injúria renal aguda (IRA) vem sendo baseado em classificações como as de RIFLE, AKIN E KDIGO, que têm o objetivo de uma padronização mundial e maior agilidade no reconhecimento da doença. É essencial que os intensivistas estejam familiarizados com estas classificações, porque, na maioria das vezes, eles terão a primeira oportunidade de diagnosticar a IRA no paciente crítico. No entanto, ainda é muito comum que a chamada do nefrologista para avaliar pacientes em UTIs seja feita em estágios muito avançados da IRA, quando as medidas para evitar a progressão da doença são bastante limitadas. Recentemente, avaliamos intensivistas sobre os critérios diagnósticos de IRA, com ênfase no RIFLE, e observamos um baixíssimo grau de conhecimento, além de pouco uso dessas classificações na prática diária. Diante da busca constante por novos biomarcadores de lesão renal, estas e outras evidências indicam a necessidade urgente de ações simples, como o início de medidas educativas, no intuito de familiarizar os intensivistas com os instrumentos clínicos mais recentes para o diagnóstico da IRA.

**Palavras-chave:** Palavras-chave; palavras, palavras; palavra.

Dear Editor,

In the last decade, acute kidney injury (AKI) diagnosis has been standardized through the classifications of RIFLE, AKIN and more recently, KDIGO.[1] It has also been suggested that the intervention of a nephrologist, when performed in a timely manner, has a positive impact on the outcome of a patient with AKI.[2]

The probable justification for this fact is the taking of measures such as: dose adjustment or suspension of potentially nephrotoxic medications, adequate volume resuscitation and earlier institution of dialysis. Thus, it is critical that intensive care physicians become familiarized with these classifications because, for the most part, they will have the first opportunity for the diagnosis of AKI in critically-ill patients. Despite the above, one of the most common complaints among nephrologists is that they are called to intensive care units (ICUs) at very advanced stages of AKI.

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Using a 14-question questionnaire, we recently evaluated intensivists' knowledge about the diagnostic criteria of AKI, in eight ICUs of a Brazilian capital, giving more emphasis to the oldest one (RIFLE). Forty-three questionnaires were answered, with most respondents (53.4%) having more than 10 years of practice in Medicine and 44.1% working with critically-ill patients for more than 10 years.

It was found that most of the intensivists (55.8%) were unaware of any diagnostic criteria for AKI, and of those who reported knowing about it, only 20.9% used criteria that were relevant. Another alarming fact is that only 25% said they use these criteria in their daily practice, being the main reason for non-standardization in the ICUs evaluated. Such data suggest that lack of knowledge is one of the facts responsible for delays in requesting the assessment by the Nephrology team in cases of AKI in ICUs.

The proper time for a nephrologist evaluation of AKI is very debatable, but there is evidence to suggest that it should be inversely proportional to the patient's condition severity. We have recently shown that a later evaluation (more than 24 hours after the diagnosis of AKI) was associated with higher mortality and progression to more severe forms of the disease in more frequent terms.[2]

Often, the intensivist is the doctor having the first opportunity to recognize AKI in its initial phase. However, our data and previous studies suggest that this has not occurred. It is likely that ignorance about AKI criteria also occurs in other states and outside the country. As an example, a study in the United Kingdom found that 33% of patients at risk of AKI were not properly clinically and laboratorially investigated, which resulted in the fact that 43% of those who developed AKI had a late diagnosis.[3]

In the search for new biomarkers for the earlier diagnosis of renal injury in critically-ill patients, the data presented here suggests that the most urgent action should be much simpler, such as the initiation of educational measures within the ICUs, to familiarize intensive-care physicians with the latest clinical tools for the diagnosis of AKI. Only then will may get to it earlier on.

## References

1. Fujii T, Uchino S, Takinami M, Bellomo R. Validation of the Kidney Disease Improving Global Outcomes criteria for AKI and comparison of three criteria in hospitalized patients. Clin J Am Soc Nephrol 2014;9:848-54. DOI: http://dx.doi.org/10.2215/CJN.09530913
2. Teles F, Teixeira MEF, de Almeida LLA, Lins CRU, Santos RO, Costa AFP. Impact of a Timely Nephrologic Consultation in Acute Kidney Injury in a Public Hospital. J Clin Nephrol Res 2016;3:1035-41.
3. Stewart JA. Adding insult to injury: care of patients with acute kidney injury. Br J Hosp Med (Lond) 2009;70:372-3. DOI: http://dx.doi.org/10.12968/hmed.2009.70.7.43116