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Editorial:

WHICH WOULD BE THE BEST STRATEGY FOR ACHIEVING A EARLY DIAGNOSIS OF ACUTE KIDNEY INJURY?

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Version en español

The estimated incidence rate of acute kidney injury (AKI) in hospitalized patients is 2-5%, and rises up to 67% on intensive care unit (ICU) patients[1]. In addition, when AKI is not solved, it turns into another serious condition as is chronic kidney disease[2].

For this reason, achieving an early diagnose of AKI would be a significant accomplishment since it will allow physicians to perform a prompt management of this condition, and consequently to optimize its evolution and prognosis. However, it is currently very difficult to obtain an early diagnosis of AKI due to the following reasons:

First, current AKI diagnosis is based on KDIGO criteria which consists of a significantly acute elevation of serum creatinine (sCr) levels (sCr increase >0.3 mg/dl or 1.5 - 1.9 times baseline value), or a significant and prolonged reduction in urinary rate (urinary output ≤0.5 ml/kg/hour throughout 6 hours)[3]. These criteria make it difficult to achieve an early AKI diagnosis since: on one hand, a mild serum creatinine elevation does not imply a mild glomerular filtration rate reduction but a significantly big one. On the other hand, a precise urinary volume collection is not easy to achieve in all patients, except in those admitted in ICU.

Second, novel biomarkers (subclinical) have recently been proposed for achieving an early AKI diagnosis[4]. However, the problem is that these novel biomarkers are expensive and not universally available in all medical centers. Moreover, they do not guarantee an early AKI detection since their request depends on the physician´s clinical

suspicion, which is based on the above mentioned KDIGO criteria.

From the above, it is clear that a more effective clinical strategy is needed to achieve an early diagnosis of AKI. In this sense, it could be proposed the following idea: since renal physiological changes generally precede kidney parenchymal damage, and that this phenomenon can be detected by changes in urine, it could be evaluated if daily urinary evaluation of simple and relatively inexpensive physiological urinary parameters (eg: urinary indices) are carried out, it would be possible to predict the early appearance of AKI through a significant change in its basal urinary values detected immediately before AKI clinical diagnosis[5-6]. This diagnostic strategy could be named *renal urinary monitoring*.

In conclusion, it is proposed here that in order to make an early diagnosis of AKI feasible, its current diagnostic strategy should be changed, and that it should be evaluated whether the performance of *renal urinary monitoring*, carried out since the patient's admission, could be effective (efficient and feasible) to achieve this purpose.

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