EDITORIAL

A nephrologist should be consulted in all cases of acute kidney injury in the ICU: yes

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“No man is an island”. John Donne (1572–1631)

Acute kidney injury (AKI) is increasingly common [1] and is associated with negative short-term outcome partly as consequences of distant organ–kidney interactions [2]. More strikingly, even mild AKI is related to long-term mortality in ICU survivors [3], increased risk of chronic and end-stage kidney diseases [4], and increased risk of major cardiovascular events [5]. Although risk seems to be correlated with severity and duration of AKI, even mild and transient AKI is associated with higher mortality and morbidity [3, 6]. Data from ICU survivors suggest that nephron loss occurs following AKI, leading to long-term renal dysfunction: the more severe the AKI is, the more severe the renal sequela is [7]. In this regard, the risk of chronic kidney disease (CKD) and end-stage CKD has been described to be increased by ninefold and fourfold, respectively [4]. Despite the increasing number of studies in this field, the exact epidemiology of renal function following ICU stay remains blurry mainly as a result of the unavoidable number of patients with unknown baseline renal function, the lack of consensus to define renal recovery, and time-dependency of the renal recovery or progression toward CKD [8]. Patients who died will never develop CKD, a limitation not often taken into account in available reports [8]. Furthermore, renal function as assessed by serum creatinine at ICU discharge is unreliable and impaired by sarcopenia [9]. Finally, the impact of sub-clinical AKI on subsequent nephron loss and risk of CKD

is unknown and frequently unmentioned. In view of this evidence, and to adequately assess renal history and deal with remaining uncertainties, a systematic follow-up by a nephrologist with adequate renal function assessment may be required.

Beyond research, early and prolonged follow-up by a nephrologist in ICU patients with AKI is mostly theoretical or supported by evidence with a high risk of bias. Although the bulk of ICU-acquired AKI is believed to be multifactorial, specific causes of AKI are often seen in ICU patients and may require specific diagnostic testing or management. Some of these aetiologies, such as post-infectious glomerulonephritis or acute interstitial nephritis, are probably underestimated, and assistance from a nephrologist should be sought more frequently. The benefit from such early nephrologist involvement has been suggested by low level evidence studies [10]. In some countries, their help might also be required to select an adequate renal replacement modality and run intermittent haemodialysis, the latter limiting need for anticoagulation, limiting costs and performing better in subgroups of patients without shock [11, 12]. Finally, they may participate in ICU multidisciplinary daily rounds, increasing quality and safety as suggested by guidelines from the European Society of Intensive Care Medicine [13]. Later during the ICU stay, at the time of ICU or hospital discharge, their help might be required in assessing residual function, identifying high-risk patients and selecting subgroups of patients in whom renal recovery might deserve to be more clearly assessed. Finally, a nephrologist will obviously be the best-suited clinician to arrange for a proper follow-up, most conveniently through an outpatient nephrology clinic. Although input of a nephrologist is to a large extent speculative, there is some evidence that suggests an improved survival rate associated with de novo follow-up by a nephrologist in survivors of AKI [14].

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For contrasting viewpoints, please go to doi:10.1007/s00134-017-4712-5 and doi:10.1007/s00134-017-4788-y.

Why hesitate?

First, because of the remaining uncertainty regarding validity and the magnitude of the practical benefits. However, in closed ICU models prevailing in European countries, we did not wait for randomized controlled trials to involve surgeons, cardiologists or infectious disease physicians when needed. The increasing and remarkable incidence of acute kidney injury is another obvious limit, and nephrologists may not be able to follow all AKI patients. However, this point, although valid, certainly needs to be tempered down by the 40% mortality observed at 1 year in patients with moderate to severe AKI [6]. Finally, there is concern about the costs associated with nephrology follow-up. An important limitation of a systematic follow-up by a nephrologist will also be dictated by the healthcare system priorities and sustainability of this strategy. All these limits are valid and may be adequate counterarguments.

However, debating whether nephrology consultation in AKI patients may be required may be perceived as intentional blindness toward current evidence:

- Acute kidney injury is an important issue from the point of view of the patient as well as the healthcare system.
- Long-term consequences of AKI are frequently underestimated and follow-up of AKI patients may certainly be improved.
- We are in urgent need of pragmatic and efficient strategies limiting both short-term and long-term consequences of AKI.
- Early and prolonged nephrology follow-up is a promising non-pharmacological strategy that may increase long-term survival and limit progression toward chronic kidney diseases.

Even with previously mentioned limits in mind, it is time to advocate an early consultation with further systematic follow-up by a nephrologist as the current best solution (Fig. 1). That said, trials assessing overall benefits of such follow-up are urgently needed. Such studies may help to stratify risks, evaluating costs and validating the strategy also in the light of patient-centred outcome and distributive justice. In the meantime, long-term follow-up by intensivists or general practitioners is certainly warranted. At hospital discharge planning further evaluation in patients having an episode of AKI is necessary. This should at least include a serum creatinine measurement 6 months to 1 year after the ICU stay [15].

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Compliance with ethical standards

Conflicts of interest

The authors both declare no conflict of interest.

Received: 9 March 2017 Accepted: 31 March 2017

Published online: 22 May 2017

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