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Intermittent haemodialysis and acute kidney injury: the need for a standard nomenclature

Sir,

Using retrospective data from three international intensive care units (ICUs), Dr Marshall et al. [1] found that a change from continuous renal replacement therapy (CRRT) to prolonged intermittent renal replacement therapy (PIRRT) for acute kidney injury (AKI) was not associated with any change in the mortality of critically ill patients without shock or brain acute kidney injury (AKI) was not associated with any change in the mortality of critically ill patients without shock or brain oedema. The authors of the study are to be congratulated for the novel data.

There is broad consensus that conventional (3–4 h every other day) intermittent haemodialysis (IHD) in the ICU must be re-formed and adjusted to account for the needs of the individual ICU patient. The duration needs to be prolonged. Whether or not the introduction of PIRRT performed by means of haemodialysis, mostly daily for 8–10 h represents the final step in the rehabilitation of IHD for the treatment of critically ill patients with AKI remains speculative. Regrettably, the authors of the study provided no data that the length of dialysis session, the dose of session or the frequency of dialysis sessions per week impact on mortality of their ICU patients.

There is also no doubt that IHD becomes more and more like CRRT through the introduction of ‘prolonged’, ‘augmented’ or ‘more intensive IHD’ (4–6 h, mean 5 h) than standard IHD [2]. Other IHD techniques are extended dialysis >8 h [3] or slow-efficiency dialysis of 6–18 h [4] performed daily or on alternate days. The term PIRRT coined by Bellomo et al. [5] for prolonged haemodialysis/haemofiltration (>3 to 4 h but not >8–10 h) add to the plethora of IHD techniques, different in dialysis time, frequency, operating parameters (blood flow, dialysate flow), dose, frequency of complications and costs. PIRRT stands more for a concept rather than for a specific modality. It has been variably named [1], performed with different duration of sessions [6] and rarely compared prospectively with less or more intensive IHD techniques [3]. Thus, there is a need for a standardized nomenclature of IHD to guide nephrologists/ intensivists.

The simple application of IHD in its conventional mode to critically ill patients with AKI is undoubtedly a thing of the past, but the ideal length of intermittent dialysis is still unknown.

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Department of Internal Medicine-Campus Innenstadt, University of Munich, Munich, Germany

E-mail: h-schi@t-online.de

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Reply

Sir,

Thank you very much for allowing us to respond to Dr Schiffl’s letter.

We do not believe that intermittent haemodialysis (HD) in the intensive care unit (ICU) must be prolonged for every critically ill patient. The landmark study of Dr Palevsky and the VA/NIH Acute Renal Failure Trial Network showed that three times a week HD achieving a Kt/V –1.2 is sufficient for unselected critically ill patients and that increasing the frequency of treatments and overall dose does not improve outcomes further [1]. This observation is consistent with the findings of others that unselected critically ill patients tolerate prolonged or continuous therapies better than shorter intermittent ones, and it is these patients who are often clinically more appropriate for CRRT and prolonged intermittent renal replacement therapy (PIRRT). In our paper, we did not specify the operating parameters of PIRRT in the contributing units. However, previous data published by two of the units show that treatments are performed every day for 8–10 h (urea reduction ratio −50%) in one unit [3] and every day or second day for 8 h (Kt/V −1.43) in the other [4].

The second point regarding nomenclature is a timely one. The term PIRRT is probably preferable over the