COMMENTARY: THE PRACTICE OF DIALYSIS IN THE INTENSIVE CARE UNIT IN A DEVELOPING COUNTRY

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Introduction and Aims: In developing countries, little is known about renal replacement therapy (RRT) for acute kidney injury (AKI) in critically ill patients. The aim of this study is to describe characteristics of patients, clinical practice of renal support and outcomes in intensive care units (ICU) in a developing country.

Methods: Patients who underwent RRT for AKI from May 2003 to July 2008, in four ICUs in our institution were included in this retrospective study. Patients with end stage renal disease or younger than aged 18 years were excluded. We have considered: patient demographics, indications of RRT, number of dialysis session, comorbidities, APACHE II score for illness severity, mechanical ventilation, use of vasoactive drugs, and mortality rate.

Results: 105 critically ill patients admitted during the study period were treated with RRT, with a mean age of 56.13 ± 16.8 (19–85) years. Sixty five were male and 40 female; all received intermittent hemodialysis. The total number of dialysis sessions was 284, and the mean number was 3.7 ± 2.9; mean length of session was 225.22 ± 75.16 (60–290) min. The majority of the cases (67%) were from medical ICU, followed by 30.2% from surgical ICUs (including cardiothoracic surgery ICU) and 2.8% from burn ICU. The most common comorbidities were type 2 diabetes mellitus in 46 (44%) and hypertension in 35 (33.4%). Sepsis was a contributing factor to AKI in 60 patients (57.14%), hypovolemia in 30 (28.5%), and cardiogenic shock in 9 (8.5%). The APACHE II score was 25.86 ± 11.8; the majority of patients (66.7%) were ventilated; 63 (60%) were under vasoactive drugs and 88 (83.8%) were oliguric. The most common indication for initiation of dialysis was hyperkalemia in 51 (48.5%) of the cases, followed by severe acidosis in 35 (33.3%) and acute pulmonary edema for 20 (19%). ICU mortality was 68.5% and increased to 95.2% when more than two organs were involved.

Conclusions: Our experience suggests that indications for initiation of RRT in ICU are not greatly different from that in industrialized countries; yet, the big difference is in a high mortality rate among our patients. (Ethn Dis. 2014;24[2]:226–228)

Key Words: Dialysis, Renal Replacement Therapy, Acute Renal Failure, Hemodialysis, Ethnicity

INTRODUCTION

Technological advances in developed countries have led to the availability of multiple forms of renal replacement therapies (RRT), including intermittent hemodialysis (IHD), continuous renal replacement therapy (CRRT), and sustained low-efficiency dialysis (SLED) for critically ill patients with acute kidney injury (AKI).1 The situation is not the same in developing countries; few data are available about the practice of RRT in intensive care units (ICU). To date, no sustainable treatment program exists for AKI in many of the 48 countries in the sub-Saharan region of Africa. Only one study describes outcomes of ICU patients requiring dialysis in an African institution2; in this review, ICU records between January 2003 and December 2004 of all patients requiring RRT were analyzed from the Johannesburg Hospital, South Africa. To increase our understanding of RRT practices in Morocco, we conducted a retrospective study to describe characteristics of patients, clinical practice of renal support, and outcome of RRT in four ICUs from a university hospital in Morocco.

METHODS

Patients who underwent RRT for AKI from May 2003 to July 2008 in four ICUs in our institution were included in this retrospective study; patients with end stage renal disease or aged <18 years were excluded. We analyzed: patient demographics, indications of RRT, number of dialysis sessions, comorbidities acute physiology and chronic health evaluation II (APACHE II) score for illness severity, mechanical ventilation, use of vasoactive drugs, and mortality rate. Also, we recorded data about technical aspects of RRT including: vascular access, number and duration of dialysis sessions, type of hemodialyzer membrane, dialysate composition and temperature, blood flow rate, ultrafiltration, anticoagulation and dialysis dose.

Initiation of RRT was decided by a senior intensivist, intermittent hemodialysis was the only modality available during the study period. Procedure and schedule were prescribed by a nephrologist, and adjustment was made taking into account the type of comorbidities and specific indication of RRT (eg, hyperkalemia, acidosis, edema, etc).

RESULTS

During the study period, 105 critically ill patients were admitted; each was treated with RRT. The mean age of the