

Background

The AKI appears in 5-25% of patients in ICU, of which 6% will require RRT. If the AKI is associated with MODS mortality will be 50% and if RRT is required this will be 80%. Acute tubular necrosis is the most common cause of AKI, it is often multifactorial, combination of sepsis, hypoperfusion and nephrotoxicity. The CRRT is an option for hemodynamically unstable patients and in those in whom intermittent HD can not handle the volume or metabolic disorders. The conventional hemodialysis in critical patients is a common practice, however, the use of continuous therapy with hemodiafiltration modality requires a special monitor, medical experience and nurses.

Objective

The aim of this study is to describe the experience using PRISMA monitor in our center.



Material and Methods

Retrospective, descriptive, observational study in which all patients who were given continuous renal replacement therapy with PRISMA were documented since this therapy was initiated in our center this is from March 2013 to November 2014. Data analysis was performed using Excel and SPSS programs. There is no conflict of interest and was conducted according to the ethics committee of our hospital.



Results

CRRT was applied in an active way to 18 patients, 15 males (83%) and 3 females (17%). APACHE II and SOFA admission average was 30.5 (SD 6.5) and 13.6 (SD 3.9) respectively:

| Demographics | N: 18 |
|------------------------------------|---------------------------|
| Males | 15 pt (83%) |
| Age | 43.9 yr (Min. 17- Max 78) |
| AKIN III | 14 pt (77%) |
| CRF | 4 pt (22 %) |
| ACRF | 3 pt (16%) |
| Cause of AKI | 83.3% Septic Shock |
| Presentation of AKI | Oliguric 86% pt |
| Average Days in UCI | 17.5 d (SD 16.5) |
| Average Days arrival/developed AKI | 2.6 d (SD 2.9) |
| APACHE | 30.5 (SD 6.5) |
| SOFA | 13.6 (SD 3.9) |

It was possible to stop CRRT in 5 of 18 patients (27.7 %), 2 patients continued with intermittent HD. There was a patient with combined therapy PRISMA-MARS.

Only 3 out of 18 patients (20%) survived the hospital stay.

In the comparative analysis of the groups: survivors versus non survivors there were non statistically significant differences in the SOFA and APACHE II scores or in the days of stay in the ICU with a IC of 95%. As for the prescription, blood flow measured in ml/min, extraction measured in ml/hr, the dialysate, the reinjection and total UF, showed no statistically significant differences with a IC of 95%.

| Variable | Averaging |
|---------------------------|-----------------|
| Filter | M100 |
| Solution | PRISMASATE |
| Blood Flow(ml/min) | 118 (SD 20.7) |
| Extraction (ml/hr) | 108 (SD 23.4) |
| Total UF (ml/ total time) | 5598 (SD 8906) |
| Dialyzing Flux (ml/hr) | 868 (SD 199) |
| Reinjection Flux (ml/hr) | 962 (SD 80.6) |
| Total Hours | 52.46 (SD 78) |
| Dialysis dose (ml/kg/hr) | 39.8 (SD 13.19) |

Discussion and Conclusion

According to the results, our experience is similar to that reported in the literature with high mortality in patients with AKI and MODS, despite improvement in renal function. With the methodology used and the present number of patients, it's not possible to point out a good or bad prediction factor on the clinical characteristics of the patients or the therapeutic prescription.

Bibliography: 1) Metcalfe W, Simpson M, Khan IH, et al. Acute renal failure requiring renal replacement therapy: incidence and outcome. QJM 2002;95:579-83. 2) Ashita Tolwani, M.D. Continuous Renal-Replacement Therapy for Acute Kidney Injury, N Engl J Med 2012;367:2505-14. 3) Ronco C, Ricci Z. Renal replacement therapies: physiological review. Intensive Care Med 2008;34:2139-46.