# USE OF CONTINUOUS RENAL REPLACEMENT THERAPY IN PATIENTS WITH CHRONIC KIDNEY DISEASE IN CONVENTIONAL HEMODIALYSIS IN HOSPITAL CENTRO MEDICO NACIONAL "20 DE NOVIEMBRE" IN MEXICO CITY.

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## INTRODUCTION:

Patients with chronic kidney disease (CKD) are admitted to the intensive care unit (ICU) with more frequency than patients with normal renal function. The main causes of admission and mortality are sepsis and cardiovascular events (CVE).

In comparison with patients with normal renal function, patients with CKD in ICU have a greater risk of mortality, moreover, the greatest risk of mortality seems to stratify with comorbidities and severity of the initial disease and not in relation with CKD.

## OBJECTIVE:

To describe the characteristics and prognosis of patients with diagnosis of CKD in intermittent hemodialysis (IHD) submitted to continuous renal replacement therapy (CRRT) and it's complications during the session.

## METHODS:

We made a descriptive analysis of the quantitative and qualitative variables of patients in the hemodialysis unit that needed to be hospitalized in ICU in the period of January to December 2019 in Hospital Centro Médico Nacional 20 de Noviembre, Mexico City.

## RESULTS:

We evaluated a total of six patients, five women and one man, with an average age of 39.8 years (range: 14 to 70 years). The etiologies of CKD were malformation of the urinary tract, diabetic nephropathy, renal-limited vasculitis and two patients with unknown etiology for the disease. The time with CKD was 4 to 24 years, with a period in IHD of 1.5 to 12 years. Five patients presented with shock (3 patients septic shock and 2 patients cardiogenic shock) during hospitalization. Three patients were initially treated with IHD because of severe hyperkalemia. The average of treatment with CRRT was of 1.8 sessions/patient. They received 11 sessions in total, average duration of every session was 39.9 hours (12 to 57 hours). Predominant modality was continuous venovenous hemodiafiltration (CVVHDF) (72.7%). Forty five percent presented fluid overload over 10%. The prevalent venous access was the femoral Mahurkar catheter (66.6%). In 27.7% of the sessions the filter was coagulated. Just in one patient was necessary the suspension of the CRRT because of refractory hypotension. Three patients (27.27%) died. Three patients went back to the chronic hemodialysis program of the institution.

## CONCLUSION:

The causes of admission (sepsis and cardiovascular events) were concordant with the findings of Manhes et al. and Uchino et al. Juneja et al. identified the necessity of mechanical ventilation and/or vasopressor aid as predictor of negative results in the ICU and Sood et al. discovered that the principal factor in mortality was the severity of the disease, concordant with the fatal result of three of our patients.

**Demographic characteristics**

| Gender | Age (y) | Etiology | Time ESRD (y) | Time IHD (y) | Diagnosis | APACHE II (%)[6] | SOFA (%)[6] | # Sessions | Indication CRRT | Type CRRT | Duration (hrs) | Withdrawal CRRT | Access | Dead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F | 14 | Malformations GUT | 7 | 3 | Septic shock | 32 (75) | 15 (>80) | 4 | Uraemia + FOD | CVVHDF[1] | 38.25* | Filter coagulation[4] | Femoral[3] | No |
| F | 33 | Unknown | 15 | 12 | Septic shock | 39 (85) | 17 (>90) | 1 | FOD | IHD + SCUF | 45 | Improvement[5] | Intracavitary | No |
| M | 59 | Unknown | 24 | 5 | Cardiogenic shock | 35 (85) | 15 (>80) | 2 | Uraemia | CVVHDF[1] | 53* | Improvement[5] | Arteriovenous fistula | Yes |
| F | 37 | Diabetic nephropathy | 6 | 3 | Septic shock | 31 (75) | 15 (>80) | 2 | FOD + Uraemia | SCUF // CVV | 50.5* | Improvement[5] | Femoral[3] | Yes |
| F | 70 | Diabetic nephropathy | 4 | 1.5 | Cardiogenic shock | 33 (75) | 15 (>80) | 1 | Uraemia | CVVHDF | 12 | Filter coagulation[4] | Femoral[3] | Yes |
| F | 26 | Renal vasculitis | 13 | 7 | Acute pulmonary edema | 26 (55) | 11 (40-50) | 1 | FOD | IHD+SCUF | 22 | Filter coagulation[4] | Femoral[3] | No |

(1) All sessions
(2) Second session
(3) Non-tunneled catheter
(4) One session
(5) Clinical and biochemical improvement
(6) Score (mortality)
*Average

ESRD: End Stage renal disease
CRRT: Continuous Renal Replacement Therapy
FOD: Fluid overload
IHD: Intermittent Hemodialysis
CVVHDF: Continuous Venovenous Hemodiafiltration
SCUF: Slow Continuous Ultrafiltration
GUT: Genitourinary malformations

APACHE II: Acute Physiology And Chronic Health Evaluation II
SOFA: Sequential Organ Failure Assessment