

PROFILE OF INFECTIOUS DISEASES AMONG PATIENTS WITH END-STAGE RENAL DISEASE UNDER HEMODIALYSIS

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Introduction

The aim of this study is to describe the pattern of infectious diseases among patients with end-stage renal disease (ESRD) under hemodialysis.

Methods

A retrospective study was conducted with 180 patients with ESRD under hemodialysis in a single center in Fortaleza metropolitan region, Northeast of Brazil, between January and December 2012. The medical records were reviewed to investigate the presence of infectious diseases, type of infection, treatment, response to treatment and complications.

Results

Patients' mean age was 55±16 years, and 57% were male. The mean time in hemodialysis was 46±51 months. Infectious diseases were found in 160 patients (88%), and the more frequent infections were: cutaneous (21%), respiratory (20%), urinary (17.5%), catheter (16.2%), arteriovenous fistula (10.6%) and gastrointestinal infections (6.8%). The diagnosis was based on clinical manifestations in the majority of cases (93.7%), and positive cultures were obtained in only 6 cases (3.7%). The isolated agents were *Enterococcus faecalis*, *Escherichia coli* (urinary infections) and *Klebsiella pneumoniae* (catheter infections). Response to treatment varied from 60.7% (in urinary infections) to 87.5% (in respiratory infections). The time in dialysis was higher among patients with fistula infection, when compared to other infections (62±58 vs. 38±13 months, p=0.0001). The majority of patients (52%) presented more than one infection in the study period. Death occurred in 25 cases (15.6%). Non-survivors were older (65±19 vs. 53±14 years, p=0.0003), were using catheter more frequently (48% vs. 13%, p=0.0002), presented a higher frequency of anemia (92% vs. 54%, p=0.0003), had lower levels of serum albumin (3.6±0.5 vs. 4.0±0.5g/dl, p=0.0003) and required hospital admission more frequently (12% vs. 2%, p=0.04).

Table 1. Comparison between survivors and non-survivors patients with end-stage kidney disease with infections in hemodialysis

	Non-Survivors (n=25)	Survivors (n=135)	P
Age (years)	65±19	53±14	0.0003
Gender – Male	17 (68%)	74 (55%)	0.27
Female	8 (32%)	61 (45%)	
Time on dialysis	35±32	48±54	0.24
Catheter use	12 (48%)	18 (13%)	0.0002
Anemia	23 (92%)	73 (54%)	0.0003
Ferritin	118±47	182±114	0.006
Serum Iron	78±49	84±37	0.48
Ca	9.8±0.6	9.6±0.7	0.18
P	5.3±1.8	5.3±1.6	1.0
CaxP	52±19	51±15	0.76
CaxP>55	8 (32%)	56 (41%)	0.50
KTV	1.4±0.24	1.4±0.25	1.0
KTV<1.2	4 (16%)	16 (12%)	0.52
Weight gain	3.8±1.9	4.0±1.6	0.57
Weight gain>2Kg	18 (72%)	115 (85%)	0.14
UF max	3.4±1.6	3.8±1.1	0.12
Hypotension	8 (32%)	30 (22%)	0.31
Hospital admission	3 (12%)	3 (2%)	0.04
Urea (mg/dL)	126±30	134±36	0.29
Urea>150mg/dL	4 (16%)	45 (33%)	0.10
Creatinine (mg/dL)	9.0±7.4	12±37	0.68
Hematocrit	32±5.4	34±4.8	0.06
Hemoglobin	10±1.9	11±2.4	0.05
Leukocytes (/mm ³)	8184±3986	6963±2855	0.06
Platelets (/mm ³)	242460±100746	225784±100527	0.44
K ⁺	5.0±1.0	5.4±0.7	0.01
K ⁺ >5.5mEq/l	9 (36%)	64 (47%)	0.38
Albumin (g/dL)	3.6±0.5	4.0±0.5	0.0003
>1 infection	14 (56%)	70 (51%)	0.82
Leukocytosis	3 (12%)	7 (5.1%)	0.19

Conclusion

Patients with ESRD under hemodialysis present a high frequency of infectious diseases. Mortality was high, and factors associated with a higher mortality were advanced age, catheter use, anemia, hypoalbuminemia and need of hospital admission. More efforts should be taken to better control hemodialysis-associated infections.

References

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