EFFECT OF MODALITY AND DURATION OF HEMODIALYSIS ON PARAMETERS OF ADEQUACY AND ALL–CAUSE MORTALITY– 36 MONTHS FOLLOW UP

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INTRODUCTION AND AIMS: Patients on dialysis are known to have significantly increased rate of death, mainly of cardiovascular cause, compared with the general population and nephrologists are actively looking for ways to improve patients' outcomes. The aim of study was to compare the parameters of anemia, nutrition, inflammation, mineral metabolism and three year survival rate, depending on hemodialysis (HD) treatment modality and duration.

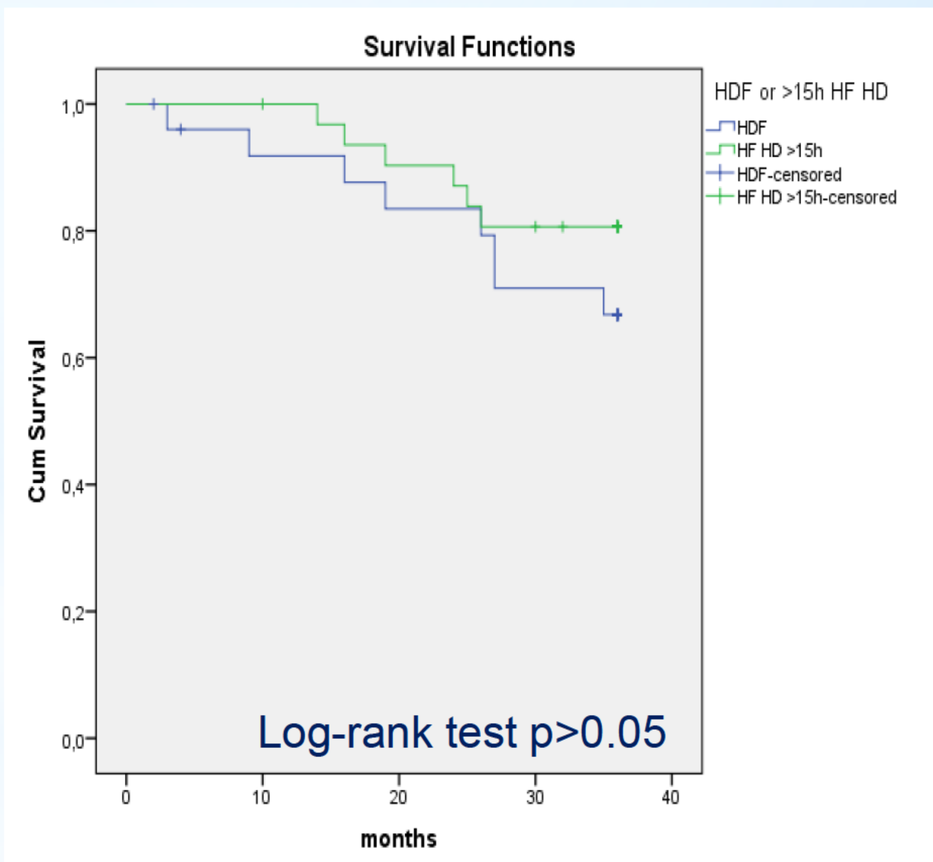
METHODS: Out of total of 206 patients treated with HD for more than 6 months in our unit, we analyzed 58 dialysis patients that were divided into 2 groups. Patients in group I were treated three times weekly with HDF in total duration of 12h; and group II, patients treated with prolonged duration of HD with high-flux membranes (≥ 15 h weekly HFHD). One-year biochemical parameters were analyzed retrospectively, together with 36 months patients' survival (prospectively).

RESULTS: Patients from group II had longer dialysis vintage (Table 1.), significantly higher Hb level (despite less frequent use of ESA), S-albumin, S-calcium, S-bicarbonates and lower iPTH level.

Table 1.Patient's characteristics and biochemical parameters (mean ± SD)

	group I HDF (=12 h) n=26	group II HFHD (≥ 15h) n=32	p
Male g. (%)	46.2 %	28.1 %	>0.05
Age (years)	57.4 ± 10.3	57.1 ± 9.6	>0.05
Time on HD (m.)	**117.9 ± 39.1**	**171.1 ± 90.8**	**<0.05**
HgB (g/dL)	**10.6± 0.7**	**11.6 ± 1.5**	**<0.05**
ESA use (%)	**80.8 %**	**50.0%**	**<0.05**
ESA weekly, (I.U.)	7071 ± 5820	5737 ± 4150	>0.05
ERI (U/kg/week)	10.4 ± 9.9	7.6 ± 5.5	>0.05
BMI (kg/m²)	23.7 ± 4.8	25.7 ± 4.6	>0.05
S- albumin (g/L)	**37.9 ± 3.2**	**41.1 ± 2.5**	**<0.001**
CRP (mg/L)	9.0 ± 9.6	8.4 ± 7.9	>0.05
iPTH (pg/ml)	**451.9 ± 402**	**287.5 ± 351**	**<0.05**
S-Ca (mmol/L)	**2.31 ± 0.12**	**2.41 ± 0.18**	**<0.05**
S-P (mmol/L)	1.65 ± 0.41	1.49 ± 0.40	>0.05
P binders use (%)	92.3 %	75.0 %	>0.05
Vit. D use (%)	53.8 %	43.8 %	>0.05
S. bicarbonates	**17.2 ± 3.78**	**21.7 ± 2.28**	**<0.001**
Kt/V value	1.49 ± 0.28	1.50 ± 0.40	>0.05

Figure 1.Kaplan-Meier survival curves



According to Kaplan-Meier survival analysis, survival between two groups was similar (Figure 1). Cox proportional hazards model showed that patients treated with longer HFHD treatment had a 44 % RR reduction of mortality compared to patients treated with HDF, but without statistical significance (HR 0.56; 95% CI 0.193 - 1,602; p=0.277).

CONCLUSION: Longer duration of HD with high-flux membranes (≥15h) had beneficial effect on anemia indices, mineral metabolism, nutrition parameters and acidosis in comparison with HDF. Also patients treated with longer dialysis on high flux membranes had lower RR of mortality than patients treated with HDF during 3 years period of time, but without statistical significance. Dialysis adequacy is not sufficient explanation for this benefit.

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