

EXTENDED THRICE- WEEKLY NOCTURNAL HEMODIALYSIS IN CENTER (nINHD) VS CONVENTIONAL HEMODIALYSIS (cHD). A PROSPECTIVE SELF-CONTROLLED STUDY.

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Objectives: The morbidity and mortality of patients on conventional dialysis schedule (240min/thrice weekly) remain high. Extended INHD, an alternative modality performed worldwide in an increasing number of patients with end stage renal disease, may reduce mortality and hospitalization rates. The aim of this study is to demonstrate whether the extended periods of hemodialysis can improve patient outcomes.

Methods: 17 patients were initially enrolled in INHD program, 2 patients dropped out of the study because of difficulty to sleep. Finally, 15 completed the 4 month period (2 females, mean age 52,33 15,55 years, 78,9 64 months on dialysis). 13 undergoing high volume predilution on line hemodiafiltration (HV-pred-OL-HDF) and 2 standard bicarbonate cHD were shifted to INHD 3 times per week (t=407 27,11min). Ten of the 15 patients dialysed via native arteriovenous fistulae, 2 via central venous catheter and one with a synthetic graft. Basic technical aspects, clinical and laboratory data were estimated at baseline period (a month before the shift) and the consecutive 4 months (follow-up period) according to european guidelines. An estimation of the quality of life with the KDQOL-SF36 questionnaire was also performed in the nocturnal period.

Results: No adverse events or technical difficulties during the dialysis sessions were observed. The results before and after 4 months of INHD are shown at the table. According to the KDQOL-SF36, all patients presented a good quality of life (mean 71,7 15,96), with cognitive function (82,56 16,22), symptom/problem list (85,1 9,91), patient satisfaction (82,05 31,52), overall health (83,85 17,58) and energy/fatigue (70,17 28,42) presenting the highest scores in the questionnaire. Finally, all of them responded that their health was better than one year ago.

Variables	Baseline (mean±SD)	4months INDH (mean±SD)	p value paired t-test
<i>Qb (ml/min)</i>	380±41,4	290,6±32,2	
<i>Qd (ml/min)</i>	643,3±17,6	510±38,7	
<i>Time(min)</i>	248±17,8	407±27,1	
<i>UFR(ml/kg/h)</i>	8,52±2,4	5±1,1	0,021*
<i>URR (%)</i>	68,2±6,4	79,4±11,7	<0,001*
<i>spKt/V</i>	1,4±0,21	1,9±0,3	<0,001*
<i>eKt/V</i>	1,2±0,18	1,7±0,29	<0,001*
<i>StdKt/v</i>	2,17±0,19	2,6±0,2	<0,001*
<i>Ca (mg/dl)</i>	9,1±0,49	9±0,42	0,11
<i>P (mg/dl)</i>	5,9±1,7	4,69±1,15	0,01*
<i>CaxP</i>	54±14,9	42±10,5	0,01*
<i>Hb (mg/dl)</i>	11,66±1,04	11,46±1,12	0,62
<i>ESA dose(iu/kg/week)</i>	139,8±99,4	134,97±105	0,68
<i>β₂microglobulin (mg/dl)</i>	29,89±8,5	6mo - 1year	
<i>LVM(gr /kg BW)</i>	151,5±33,8	6mo - 1year	
<i>EF%</i>	61± 10,02		

*statistically significant differences on paired t-test (P<0,05)

Conclusions: The INHD is safe and is associated with significant decrease in the ultrafiltration rate (UFR). The mean systolic pressure was stable with reduced doses of antihypertensive drugs. Significant improvement in the indices of dialysis adequacy, reduced levels of serum phosphate pre-dialysis (10 patients stopped taking phosphate binders and having dietary restrictions) and a better quality of life, were also observed. Currently, we are the only Dialysis Center in Greece to run a INHD. The indices of left ventricular “geometry” and the levels of β₂microglobulin are needed to be reassessed after six months and one year of INHD.

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