

Does High Convection Volume On-line Hemodiafiltration Affect Health Related Quality of Life ?

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Objective

To examine whether transition from high-flux hemodialysis (HF-HD) to On-line Post-dilution Hemodiafiltration (OL-HDF) with convection volume of over 20 liters, improves patients' quality of life (QoL) and their hemodynamic stability during dialysis treatment.

Methods

One year prospective, nonrandomized, open-label, single-center study was conducted with a cohort of 45 ESRD patients, who underwent 12 weeks washout period of HF-HD (Fx-80 HF membrane)

- **PERIOD A** - 24 weeks of High-Flux HD treatment (Fx-80)
- **PERIOD B** - 24 weeks of on-line post-dilution HDF treatment (Fx-80)

Study

N=45 patients

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wash out period 12 weeks

2 dropouts during washout:
1 death
1 transplant

N=43 patients

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24 weeks HF-HD

3 dropouts:
1 death
2 refused to participate

N=40 patients

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-

24 weeks OL-HDF

6 dropouts:
1 hospitalization in another hospital
1 death
3 carrier kpc/vre
1 vascular problem

N=34 patients

Study tools

- Quality of life of the study population was evaluated by the Kidney Disease Quality of Life Short Form (KDQOL-SF).

KDQOL-SF consists of 2 parts: generic part and a disease specific part.

α -Cronbach 0.68-0.95

Study tools (cont.)

- The number of intradialytic hypotension episodes, incidents of hospitalization, dialysis characteristics and laboratory results were followed and analyzed.

Demographic data of patients that completed & did not complete the study

	N=34	N=11	Fisher/ χ^2 /Wilcoxon/ t-test)
Age	65 (57-70)	68 (49-64)	NS
Women (%)	18 (52.9)	3 (27.3)	NS
Religion: Jews	15 (44.1)	8 (72.7)	NS
Muslims	14 (41.2)	1 (9.1)	
Christians	2 (5.9)	1 (9.1)	
Druze	3 (8.8)	1 (9.1)	
Native Language: Hebrew	14 (41.2)	5 (45)	NS
Russian	3 (8.8)	3 (27.3)	
Arab	17 (50)	3 (27.3)	
Family status: Married	27 (79.4)	8 (72.7)	NS
Divorced	2 (5.9)	1 (9.1)	
Single	5 (14.7)	1 (9.1)	
Education: High school	17 (50)	2 (18.2)	NS
Professional	12 (35.3)	6 (54.5)	
Academic	5 (14.7)	3 (27.3)	
Vintage (month)	31 (13-50)	30 (6-77)	NS
Diabetes (%)	23 (67.6)	6 (54.5)	NS
Charlson Comorbidity	4.94±1.56	5.45±1.21	NS

Dialysis parameters, comparison between study periods

	HF-HD	OL-HDF	Fisher/Wilcoxon/t-test
Session time (min)	238 (225-239)	241 (228-240)	NS
Blood flow (ml/min)	321 (314-330)	334 (320-336)	p<0.05
Weight gain (kg)	2.3±0.91	2.3±0.96	NS
Weight after the dialysis (kg)	90.26±21.66	90.37±21.54	NS
AVF	20 (58.8%)	19 (55.95%)	NS
Convection volume	-	21.4 ±1.8	

Blood tests results

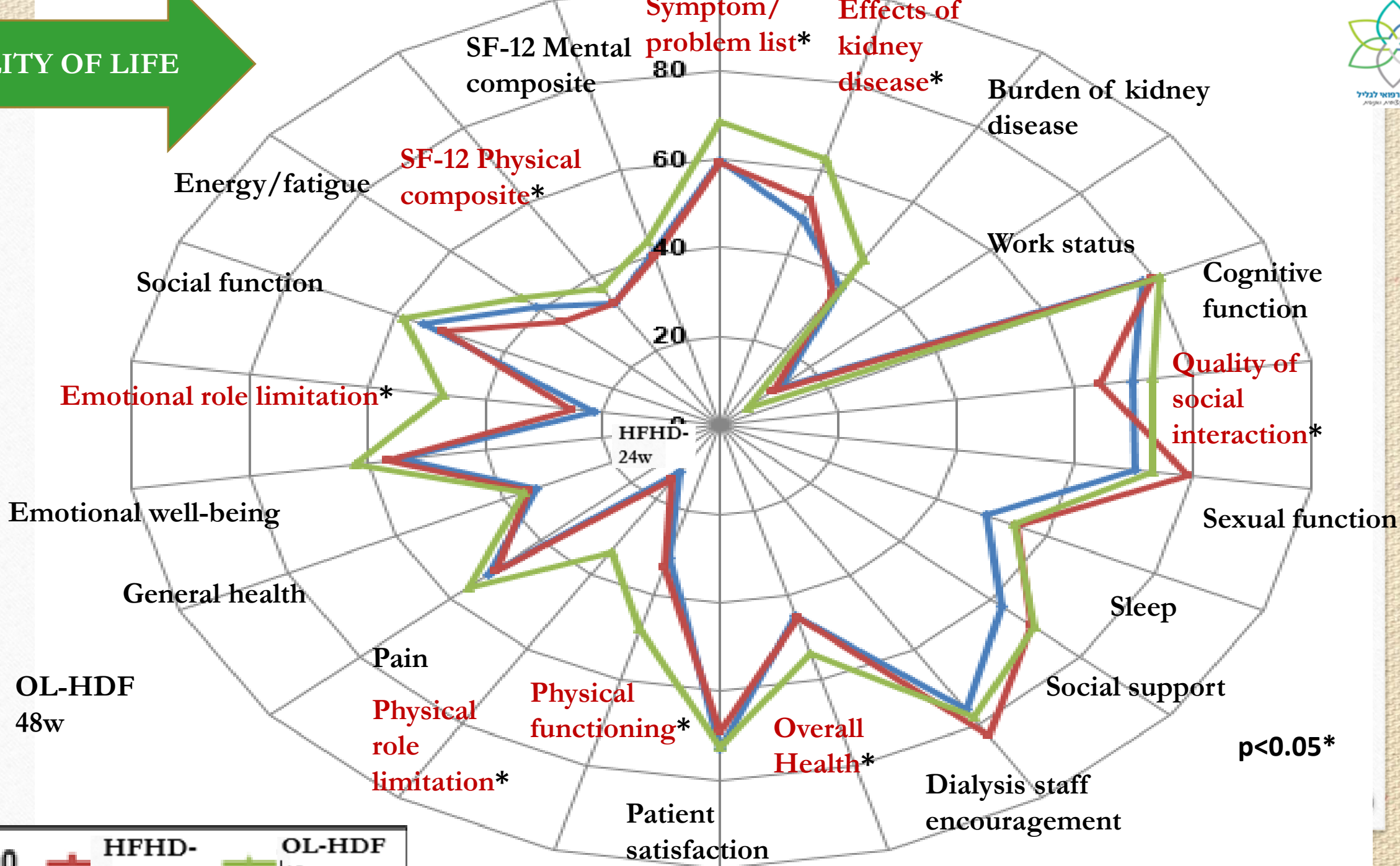
	Washout t=0	HF-HD t=24 w	OL-HDF t=48 w	Friedman test
Hemoglobin (g/dl)	10.6±1.11	11.01±0.13	10.7±0.19	NS
Phosphorus (mg/dl)	5.29±1.58	5.23±1.18	4.63±1.27	p<0.05
Creatinine (mg/dl)	10.05±2.7	9.6±2.39	9.4±2.54	p<0.05
Albumin (g/dl)	3.7±0.24	3.7±0.2	3.70±0.19	NS
CRP (mg/l)	25.7±35.15	21.38±30.45	25.89±30.83	NS
Bic (meq/l)	20.01±2.16	23.91±2.51	21.71±2.52	p<0.05
HbA1C (%)	6.15±1.44	6.05±1.34	6.02±1.28	NS
Uric acid (mg/dl)	5.84±1.44	6.83±1.14	6.53±1.28	NS
Ferritin (ng/ml)	362.81±187.29	376.25±208.28	361.74±229.2	NS

Clinical parameters during HF-HD and OL-HDF periods

	HF-HF	OL-HDF	
Incidence of hypotension episodes (per month per patients)	1.12±0.8	0.33±0.3	p<0.001
Incidence of hospitalization	1.7±1.15	0.74±0.38	p<0.05

Decrease of 68% in hypotension events during OL-HDF. (Z=-3.89, p<0.001) ²⁰

QUALITY OF LIFE



p < 0.05*



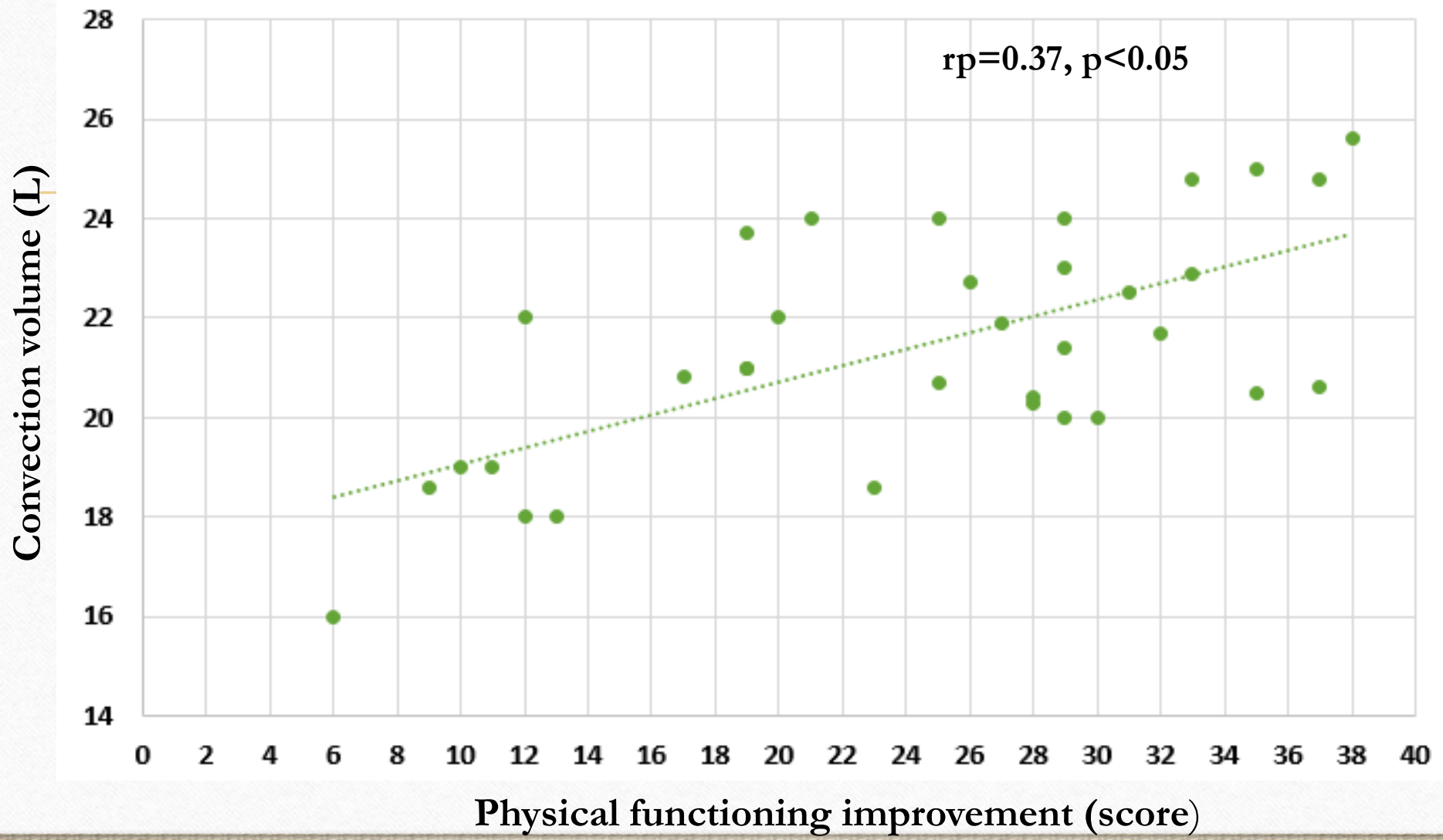
Post-hoc analysis

	0	HF-HD	OL-HDF	Δ	Δ
				0-HD	HD-HDF
				Post Hoc	Post Hoc
				Bonferroni	Bonferroni
Symptom/ problem list*	59.5±18.1	59.1±16.6	68.5±21.2	0.37	-9.38*
Effects of kidney disease	48.6±21.9	52.8±20.5	62.5±24.4	-4.23	-9.65*
Physical role limitation	31±28.8	29.94.33	33.3±9.74	-2.35	-14.56*
Physical functioning	12.5±25.6	14.7±30.2	33.8±33.6	-2.21	-19.12*
Emotional role limitation	21.6±27.5	25.5±22.3	47.9±27.1	-3.92	-21.57*
Quality of social interaction	70±19.8	64.5±18.3	73.3±21.3	5.49	-8.82*
Physical composite	32.8±7.9	32.9±8	36.6±10	-0.1	-3.75*
Overall health	45±19.7	45.3±14.8	53.5±17.4	-0.3	-8.2*

p<0.05*

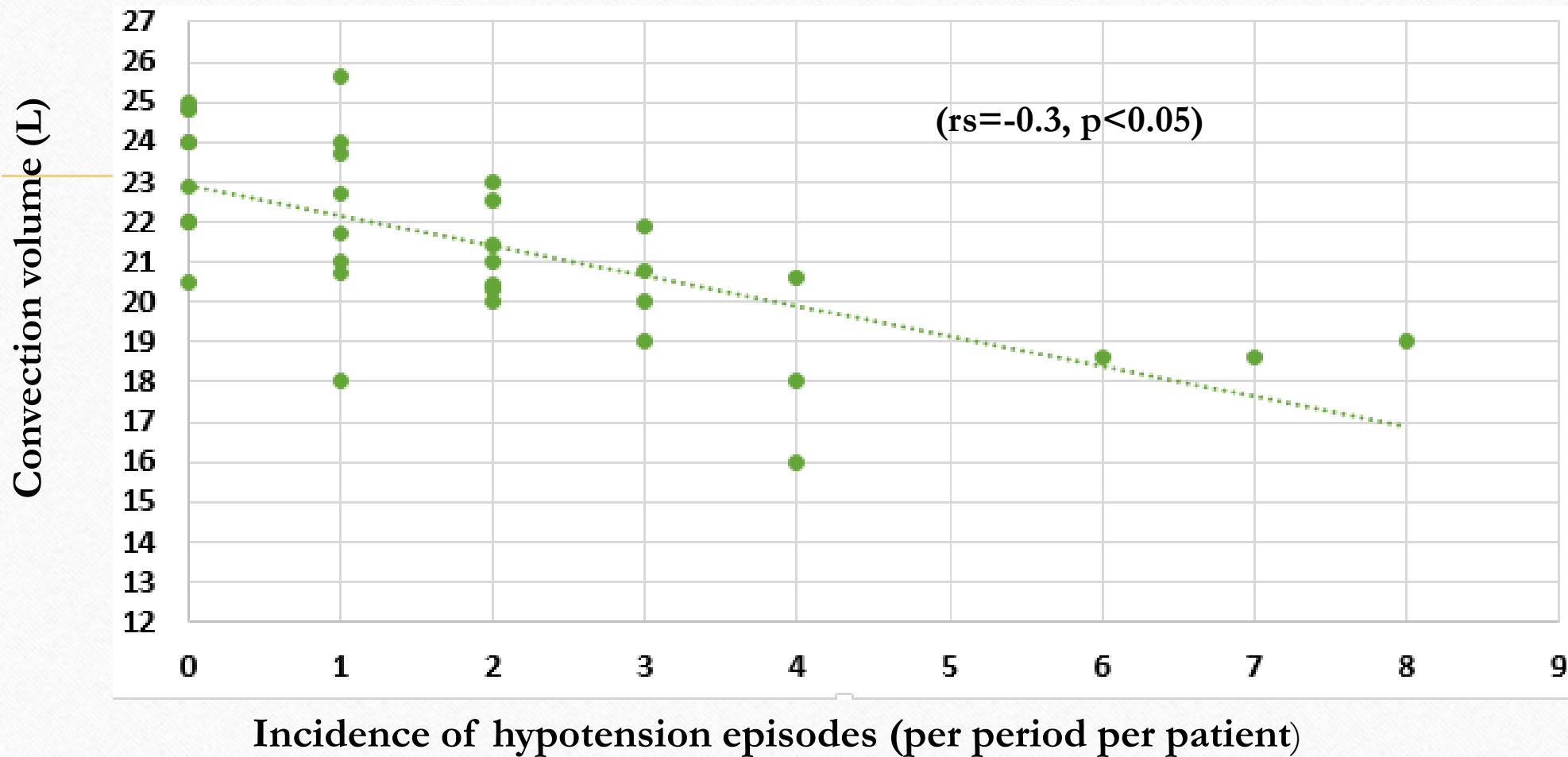
Physical functioning improvement & Convection volume

(Convection volume= substitution fluid + intradialytic gain weight loss)



Hypotension episodes & Convection volume

(convection volume= substitution fluid + intradialytic gain weight loss)



Conclusions

- **Post-dilution OL- HDF significantly improved quality of life**
- **Post-dilution OL- HDF significantly reduced incidence of intradialytic hypotension and hospitalization.**



המרכז הרפואי לגליל
רשתות אקדמיות ואנשים

THANK
YOU