The Role Of Convection On The Long-term Variations of Serum Beta 2 Mycroglobulin (ΔB_2M), C-reactive Protein (ΔhsCRP) Concentrations, and ESA Requirement (ΔESA) In Uremic Patients Treated By Post Dilutional On-line HDF.

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OBJECTIVES

Inflammation and increased ESA requirement are frequently associated in patients on dialysis treatment.
On-line Hemodiafiltration (Ol-HDF), putting together high levels of diffusion and convection could improve both conditions.
However, it is still not known which depurative component predominate in determining this result.
Aim of the study: to evaluate the role of convection and diffusion on ΔB2M, ΔhsCRP), and ΔESA in Ol-HDF.

METHODS

30 patients, 26 men, age 57±13 years, dialytic vintage 1-10 years, were switched from conventional HD to post dilutional Ol-HDF.
At **12 months** the effect of Ol-HDF on ΔhsCRP, ΔB2M, and ΔESA (U/Kg/sett) were evaluated.
Other variables considered: Body weight (BW), serum albumin (sAlb), Hemoglobin (Hb), Kt/V.
Iron therapy and ESA were administered IV according to the K/DOQI guidelines in order to maintain TSAT between 20-40%, serum ferritin between 150-500 ng/ml, Hb between 11-12 g/dL.
Qb, treatment time, and Qd remained constant.
Ol-HDF was performed utilizing High-flux membranes 1.9-2.1 sqm.
Ultrapure dialysate and substitution fluid was employed in both HDF and HD treatments.
Data are expressed as mean±SD. Paired t test, Mann-Whitney U test, simple and multiple regression analysis were employed for statistical evaluation.

RESULTS

	N°= 30
Age (years)	58±13
Males	26 (87%)
Dialytic Vintage (years)	3.7 (1-10)
Peripheral Vasculopathy	17 (57%)
Ischaemic Hearth Disease	16 (53%)
Diabetes	13 (43%)
Chronic Glomerulopathy	8 (27%)
Tubulointerstitial Neprhitis	4 (13%)
Unknown Nephropathy	5 (16%)
Hypotensive Therapy	23 (76%)

Table I

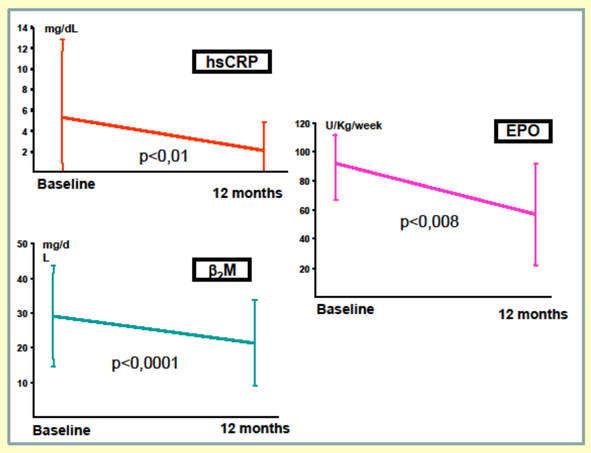

Figure 1

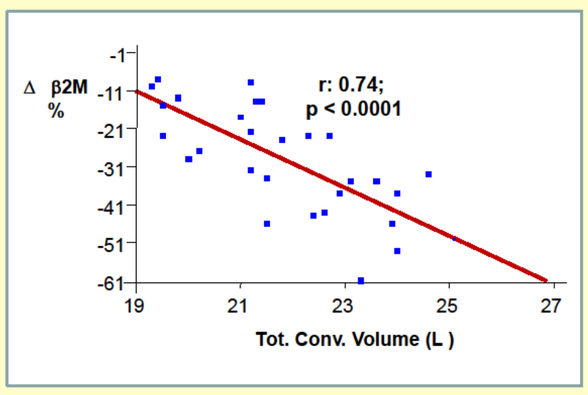

Figure 2

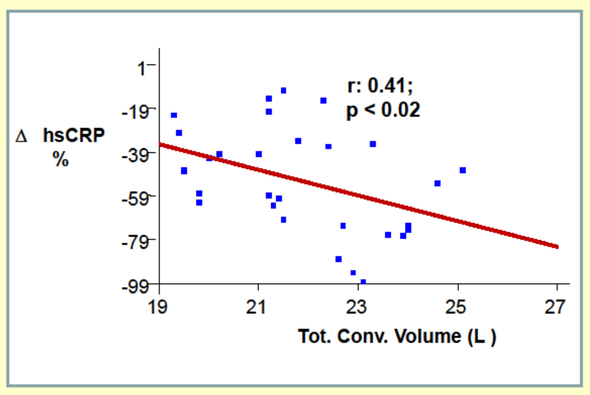

Figure 3

Table I shows the clinical characteristics of the patients.
Total convective volume (TCV) was 21.8±1.7 L/session.
Figure 1 shows: Significant reduction of **hsCRP**:(from 5.3±7.5 to 2.1±2.7 mg/dl; p<0.01), **B2M** (from 29.0±14.4 to 21.3±12.3 mg/dl; p<0.0001) and **ESA** (from 92±6 to 57±35 U/Kg/week; p<0.008).
No significant variations of Kt/V, Hb, BW, sAlb were observed.
Figure 2 shows a **significant inverse correlation between TCV and ΔB2M** (r: 0.74; p<0.0001).
Figure 3 shows a **significant inverse correlation between TCV and ΔhsCRP** (r: 0.41; p<0.02). No correlation between TCV and ΔEPO was found.
No correlation was found between Kt/V and: ΔB2M, ΔhsCRP, ΔESA.
Multiple regression analysis with ΔEPO as dependent variable showed **ΔhsCRP** as the only significantly associated independent factor (p<0.008).

CONCLUSIONS

On-line Hemodiafiltration induces a long-term significant reduction of Beta 2 Mycroglobulin and C-reactive Protein concentrations.
The entity of reduction is **directly correlated** to the amount of **Total convective volume**.
The observed **reduction in ESA requirement** is **associated** to **the reduction of inflammation** and seems to be independent from convection.

51ERA-EDTA
445--SP
M) Dialysis. M1) Extracorporeal dialysis: techniques and adequacy.
Ezio Movilli
DOI: 10.3252/pso.eu.51era.2014
Poster presented at: 51 ERA-EDTA CONGRESS AMSTERDAM 2014