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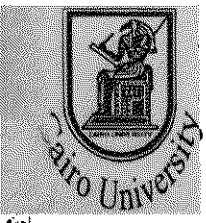

KASR ALAINY

The Effect of Haemodiafiltration on Serum Levels of Interleukin-6 in Chronic Haemodialysis Patients

Thesis Submitted for
Fulfilment of the Master Degree in Internal Medicine

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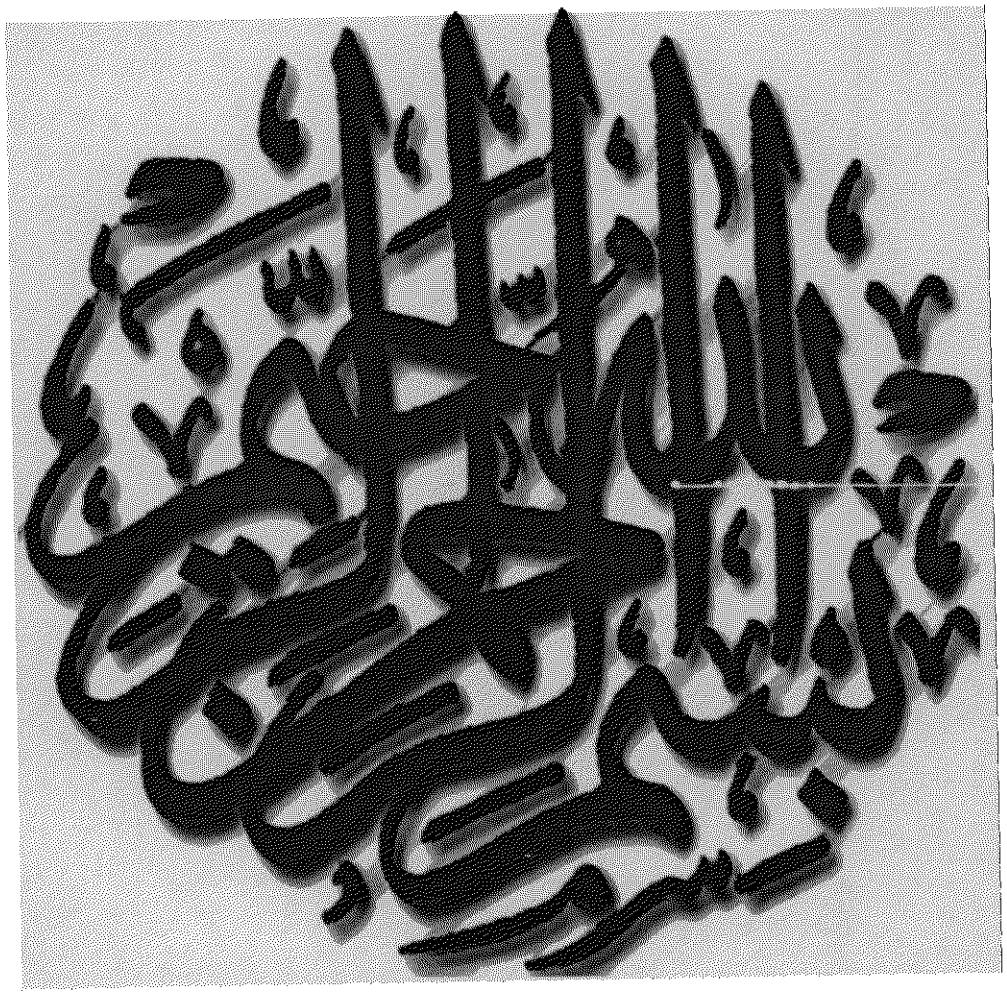

To My Father: My Mentor
To My Mother
To My Wife
To My Daughters: Zainab, Fatima and Amenah

Abstract

Background: Chronic kidney disease is related to many comorbidities with end stage renal disease (ESRD) and cardiovascular disease (CVD) being at the top. Increased serum levels ofinflammatory cytokines correlate well with increased morbidity and mortality in CKD and ESRD patients. Being a middle weight molecule, IL-6 (26 kDa) is cleared more efficiently by haemodiafiltration compared to conventional haemodialysis, and thus haemodiafiltration reduces the severity of chronic inflammation in patients receiving regular haemodialysis treatment (RDT).

Objectives: To assess the effect of online haemodiafiltration (ol-HDF) on the serum levels of IL-6 and CRP among stable ESRD patients on regular haemodialysis treatment (RDT).

Methods: Eleven patients on regular conventional haemodialysis were checked for serum levels of IL-6 and CRP then then received one session of online haemodiafiltration every week in addition to two haemodialysis sessions and were followed up for 3 months. Serum IL-6 and CRP were measured on regular intervals and were compared to results obtained before introducing haemodiafiltration

Results: Mean Calculated Kt/V was significantly higher in HDF compared to HD (1.524 vs. 1.30). Median serum IL-6 level was 27.8 pg/l; there was no significant change in the levels of IL-6 before and after HD as well as on monthly follow up for 3 months. There was a significant increase in post HDF IL-6 serum levels compared to pre HDF. Median serum CRP was 24.2 mg/l. There was no significant change in levels before and after HD and HDF or on 3 months follow up.

Conclusions: Base line serum levels of IL-6 and hs-CRP are high compared to normal individuals. IL-6 levels increased immediately after HDFdue to inadequate water purification, but there were no significant changes during 3 months follow up. CRP levels were not affected by dialysis modality nor showed any significant change on follow up. Thus, combination of 2 HD sessions and 1 HDF session per week may not have an impact on the pre-existing inflammatory state of the patients.

Keywords: ESRD, Haemodialysis, Haemodiafiltration, IL-6, (hs)-CRP

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Ali AbdulkarimSheiban

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