Introduction: Cognitive decline is highly prevalent amongst end-stage renal disease (ESRD) patients and is accelerated upon initiation of hemodialysis (HD). ESRD increases aortic stiffness and blood flow pulsatility, which may damage small vessels of target organs such as the brain. In this pilot study, we aimed to evaluate the acute effect of HD on cerebral blood flow and its relation to arterial stiffness.

Methods: Before, every hour during, and after HD (T0–T4), we measured cerebral flow velocity (FV) using transcranial Doppler, blood pressure (BP) via digital finger cuff (Nexfin), cardiac activity using ECG, and aortic pulse wave velocity (PWV) with Mobile-O-Graph. FV pulsatility index (PI) and transit times between ECG peak and the foot of both FV and BP waveforms (cerebral dt; digital dt) were computed using in house MATLAB-based analysis. Changes during HD were evaluated with Generalized Estimating Equation models adjusting for multiple comparisons in SPSS 26.0.

Results: In eight participants aged 63 ± 17 y. old (4 diabetics, 3 women), mean FV was significantly decreased from baseline at T1 and T2 (mean FV: 9.75 cm/s, p=0.012; 10.1 cm/s, p=0.012), peak FV was significantly decreased from baseline at T2 (13.2 cm/s, p=0.001). PI decreased at T1 (0.81 to 0.77, p=0.005), whilst minimum FV, mean BP and partial pressure of CO2 remained unchanged. Digital dt increased at T3 (0.19 ± 0.01 to 0.22 ± 0.02, p<0.001) and cerebral dt increased throughout HD (T1-T4, p<0.005), whereas aortic PWV did not change.

Conclusions: During hemodialysis, cerebral and digital transit times increased, suggesting decreased stiffness of small peripheral vessels, without significant changes in aortic stiffness. Reduced stiffness of cerebral arteries may partially explain decreased cerebral flow pulsatility.

No conflict of interest

POS-604
MIDDLE MOLECULE CLEARANCE & EXPANDED DIALYSIS: WHAT IS THE IMPACT ON PATIENT-REPORTED SYMPTOM BURDEN, THROUGH THE LENS OF THE LONDON EVALUATION OF ILLNESS (LEVI)

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Introduction: Traditionally used high flux (HF) dialyzers are incapable of clearing toxins of larger middle molecular weight, which are mainly responsible for chronic systemic inflammation, cardiovascular adversity, and poor clinical outcomes in the hemodialysis (HD) population. The recent advent of medium cut-off dialyzers (MCO)-termed expanded dialysis (HDx), have been proven to clear these hard-to-reach toxins while selectively retaining valuable proteins—a step in the right direction as we strive to improve patient care. However, there is no literature focusing on the direct impact of HDx on patient-reported symptoms and quality of life (QoL); a mortality risk in itself.

Historically used cross-sectional QoL and symptom measurement tools are unable to properly assess and track the variabilities of symptom burden and are not responsive to short-term changes. The London Evaluation of Illness (LEVI) is a patient-reported symptoms measurement tool meant for iterative use, and captures fluctuations in real-time. Symptom domains measured by LEVI include general well-being, energy, sleep quality, bodily pain, appetite, and breathing; domains relevant to the chronic kidney disease population. We report on the impact of 12 weeks of HDx therapy on symptom burden and QoL in patients undergoing conventional HD, measured by LEVI.

Methods: A single-centred intervention pilot study in the prevalent chronic HD population-London Health Sciences Centre where 22 participants completed the study. The study was 14 weeks in length; the first 2 weeks patients completed the LEVI questionnaire with each dialysis session using their HF dialyzer to establish baseline symptom scores. Patients were then changed to Theranova (Baxter–MCO dialyzer) for 12-weeks, continuing the complete LEVI with each HD session. Bloodwork for CBC, lyses, urea, Cr, Ca, Phos, Alb, CRP, B2M, Free-Light-Chains (FLC) were drawn at the beginning and end of the study.

Results: Baseline results were stratified into two groups. Those with an average baseline LEVI score (scale of 0=poor, 100=excellent) of 70 or above were grouped as “HIGH baseline,” while those with a LEVI score of <70 were labeled “LOW baseline.” When all six symptom domains were combined, resulting in an “overall” QoL score, 73% of patients had a LOW baseline score (mean 51.5±10.2). There was a significant improvement in overall QoL in this group after 8 weeks (mean 64.6±16.2, p=0.0013) and 12 weeks of HDx therapy (mean 67.2±16.6, p=0.0001). There was no impact on overall QoL in those with a HIGH baseline score. There were no significant differences in lab values other than a reduction of FLC in both groups, most significantly in Kappa-FLC in those with LOW baseline scores (p=0.0182). Domain-specific results also showed that patients with LOW baseline scores benefited after 8 weeks of therapy in the domains of general well-being (p=0.0008) and energy (p=0.0011). Sleep quality improved after just 4 weeks of therapy (p=0.0098).

Conclusions: HDx improves QoL and symptom burden in those with LOW baseline LEVI scores, significantly impacting general well-being, energy, and sleep quality. LEVI can identify patients who may benefit from HDx and proves to capture the response to treatment after 8 weeks in the domains that most significantly impact HD patients’ QoL. Could this be the ‘magic wand’ to improve patient care?

No conflict of interest

POS-605
CORRELATION OF HAND GRIP STRENGTH WITH QUALITY OF LIFE CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HEMODIALYSIS

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Introduction: Chronic kidney disease is abnormalities of kidney structure or function present for >3 months, with implication for health. The purpose of this study is to determine correlation of hand grip strength with quality of life chronic kidney disease patients undergoing hemodialysis.

Methods: This is cross-sectional study, hand grip strength was measured by a hand grip dynamometer. Quality of life measurement by KDQOL SF 1.3 questionnaires.

Results: There were 32 patients in this study. Majority of patients (26 patients) have low hand grip strength. There was significant correlation of hand grip strength with quality of life chronic kidney disease patients undergoing hemodialysis

Conclusions: There was significant correlation of hand grip strength with quality of life chronic kidney disease patients undergoing hemodialysis.

No conflict of interest