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CORRELATION BETWEEN NERVE CONDUCTION CHANGES AND BETA-2 MICROGLOBULIN CONCENTRATION IN CHRONIC KIDNEY DISEASE PATIENTS ON HEMODIALYSIS COMBINED WITH HEMODIAFILTRATION ONLINE

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Objectives: This study aimed to investigate the correlation between Beta-2 Microglobulin (B2M) concentration with the changes of some nerve conduction indices and evaluate the changes of some nerve conduction indices in End-stage renal disease (ESRD) patients after standard hemodialysis (HD) combined with hemodiafiltration online (HDF-online).

Methods: From 07/2021 to 07/2022, a cross-sectional study was conducted on 80 ESRD patients on HD at Can Tho General Hospital, Viet Nam. All the patients had B2M testing and nerve conduction measurements. Patients with nerve conduction disorders were treated and re-measured after 6 months to evaluate the treatment results

Results: At baseline, there was a moderate negative correlation between B2M and the tibial nerve and motor branch of the ulnar conduction velocity ($r = -0.305$ and -0.315, $p<.05$). There was a moderate positive correlation between B2M and motor latency of the tibial and peroneal nerve ($r=0.434$ and 0.440, $p<.05$). After 6 months of using the combination of HD and HDF-Online, the velocity (31.3±7.96 up to 44.88±9.67 m/s) and the amplitude (1.71±1.16 up to 2.61±1.51 mV) of the peroneal nerve increased, the motor latency decreased (8.21±2.65 down to 5.23±3.58 ms). With the tibial nerve, motor conduction velocity increased from 30.53±8.05m/s to 43.56±8.99m/s and the amplitude increased from 5.04±3,16mV to 7.75±4.45 mV. With the ulnar nerve, the amplitude increased, and motor latency decreased after 6 months. The nerve conduction indices also improved significantly in the median nerve

Conclusions: This study showed that in Vietnamese chronic kidney disease patients, serum B2M concentration correlated with some nerve conduction indices such as the tibial nerve and ulnar conduction velocity, the tibial and peroneal nerve latency. The combination of HD and HDF-online could improve some nerve conduction indices

Table 1. Correlation between B2-M concentration with the change of some nerve conduction indices