

HIGH RENAL RECOVERY RATE FROM CAST NEPHROPATHY FOLLOWING FREE LIGHT CHAIN REMOVAL HEMODIALYSIS

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This study assessed the efficacy of high cut-off hemodialysis (HCO-HD), using the Gambro HCO 1100™ dialyser, to result in sustained reductions in serum free light chain (FLC) concentrations in patients with cast nephropathy. Renal recovery rates and survival in 17 patients treated with HCO-HD were compared with a case matched control population treated with standard high flux dialysis (n=17).

Standard induction chemotherapy regimens were initiated in all patients. HCO-HD was undertaken for 8 hours daily for the first 5 days and then 8 hours alternate days through to 21 days. Extended HCO-HD was supported by the replacement of human albumin solution, magnesium and calcium per protocol.

HCO-HD resulted in sustained reductions in serum FLC concentrations in 12 of 17 patients (median 86% (range 50-93)). These 12 patients became independent of dialysis at a median of 27 days (range 13-50). With an estimated GFR three months following the commencement of treatment of 44mls/min/1.73m² (range 29-60). Five patients had chemotherapy stopped because of early infective complications and did not achieve sustained reductions in serum FLCs. These patients did not recover renal function and had a significantly reduced survival (P<0.002). On an intention to treat basis FLC removal HD increased the rate of renal recovery from two of 18 (11%) patients in the control population to 12 of 17 (70%) in the study population (P<0.0001). In both groups, patients with cast nephropathy who recovered renal function had a significantly improved survival, P<0.012.

In conclusion, extended HCO-HD resulted in sustained reductions in serum FLC concentrations in patients with cast nephropathy. This was associated with an increased rate of renal recovery compared with a historical control group and improved survival.