HIGH CUT-OFF DIALYSIS IN MYELOMA

Patients with multiple myeloma often experience acute kidney injury (AKI), which can lead to permanent loss of renal function. Colin Hutchison and colleagues have achieved encouraging results treating myeloma-associated AKI with a combination of high cut-off hemodialysis (HCO-HD) and chemotherapy.

Cast nephropathy caused by elevated serum concentrations of monoclonal free light chains (FLCs) accounts for 70% of cases of dialysis-dependent AKI in the myeloma setting. Although AKI is associated with high morbidity and mortality among patients with myeloma, outcomes improve if renal function recovers.

Using a mathematical model, Hutchison *et al.* determined that prolonged HCO-HD would considerably reduce FLC concentrations. In a single-center, prospective, pilot study, the researchers treated 19 cases of myeloma-associated cast nephropathy with HCO-HD and chemotherapy. During the first 6 weeks of treatment, six patients had to temporarily stop chemotherapy because of complications. Although HCO-HD removed serum FLCs effectively in all patients, only the 13 patients who underwent uninterrupted chemotherapy achieved early, sustained reductions in FLC concentration. Of the 14 patients who became dialysis-independent at 120 days, 13 had undergone uninterrupted chemotherapy. The median survival of the six patients who had not achieved sustained, early FLC reductions was 53 days, whereas all remaining 13 patients were alive at a median follow-up of 360 days.

"To achieve a sustained reduction in FLCs," Hutchison points out, "removal by dialysis needed to be combined with effective chemotherapy to reduce production rates." His team has now initiated a randomized, controlled trial of HCO-HD in patients with cast nephropathy.

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Original article Hutchison, C. A. *et al.* Treatment of acute renal failure secondary to multiple myeloma with chemotherapy and extended high cut-off hemodialysis. *Clin. J. Am. Soc. Nephrol.* **4**, 745–754 (2009).