High cut-off dialyser haemodialysis in cast nephropathy

Sir,

The importance of renal function in the prognosis of patients with multiple myeloma (MM) has been well established and rapid reversal of renal failure may offer the best long-term outcome. The use of extracorporeal means of removing immunoglobulin free light chains (FLCs) responsible for cast nephropathy in patients with MM is controversial. Nephrologists are interested in a treatment strategy combining chemotherapy and extracorporeal treatments in patients with biopsy-proven cast nephropathy or a high probability of cast nephropathy (defined as >200 mg/dL on the FLC assay). Some previous studies have shown that the plasma exchange is unable to remove sufficient FLCs for clinical benefits. The issue of whether an extended duration of dialysis with high cut-off (HCO) dialysers is more effective than plasma exchange at removing FLC or reversing renal failure is not settled [1]. Hutchison and Leung reported that a 60% reduction in FLCs by Day 21 is associated with recovery of renal function for 80% of the studied patients [2].

Our experience: a 43-year-old man, who was not complaining of any previous disease and with a previously normal renal function, suffering from biopsy proven lambda myeloma kidney, without any histological sign of chronic renal damage, and renal failure dialysis dependant, in 2 weeks received 10 haemodialysis (HD) treatments with HCO-dialyser (Theralite Gambro). We quantified the concentration of FLCs by nephelometry (Biocite, N latex test; Siemens). Initially, \( \lambda \) FLC concentration was 5500 mg/L. At the end of HCO dialyser HD cycle, the concentration was 94.80 mg/L (Table 1).

We did not observe any adverse effects. We observed by Day 7 a sustained and >50% reduction of FLCs with dialysis alone before the chemotherapy was initiated. After the third HCO-dialyser HD, the patient started PAD Orlowsky chemotherapy (Bortezomib–Doxorubicin–Dexamethasone) with successful haematological result but with partial renal function recovery. Currently (5 months after HCO-dialyser treatment), the patient is on maintenance HD two times a week. Some reports show a recovery of renal function after several months. If the patient does not recover normal renal function, we think that a new kidney biopsy can help his management.

Table 1. Concentrations and ratios of FLC before and after HCO-dialyser HD

| n HD treatment | k-FLC mg/L (n.v. 6.70–22.40) | \( \lambda \)-FLC mg/L (n.v. 8.30–27.00) | Ratio k/\( \lambda \) |
|---------------|----------------------------|---------------------------------|-------------------|
| 1: Before/after | 41.50/13.10 | 5500/1090 | 0.01/0.01 |
| 3: Before/after | 24.40/8.16 | 1410/301 | 0.02/0.03 |
| 6: Before/after | 28.00/8.65 | 743/203 | 0.04/0.04 |
| 10: Before/after | 24.50/9.17 | 428/94.80 | 0.06/0.10 |

\( \text{n.v., normal values.} \)

References

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2. Hutchison CA, Cockwell P, Stringer S et al. Early reduction of serum-free light chains associates with renal recovery in myeloma kidney. J Am Soc Nephrol 2011; 22: 1129–1136

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