Recombinant Human Erythropoietin and Haemodialyser Re-Use

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Sir,

Dialyser re-use has been a current practice all over the world since it was introduced by Shaldon et al. in 1964 [1], and there is accumulated clinical experience proving its safety and efficacy [2–4]. We have been re-using hollow-fibre cuprophane haemodialysers using peracetic acid as sterilant with an automated re-processing system since October 1985 with excellent results. Our goal has been to reach a maximum of 7 uses with the same dialyser. Major criteria for discarding dialysers have been ruptured fibres and a loss of 15% or greater of total initial fibre bundle volume. In some recent reports, major clotting problems were noticed in patients given recombinant human erythropoietin (rHuEPO) under vigorous treatment protocols for chronic renal failure anaemia [5–7]. A small increase in platelet counts reported with more cautious protocols seems not to be the only factor responsible for the shortening of the bleeding time observed with an increased haematocrit over 30% [8, 9].

To elucidate if our standard re-use technique could be affected by these haematological changes, we have studied in 19 patients under unchanged dialysis schedule and heparinisation, at a same re-use level, the total fibre bundle volumes of the dialysers 12 weeks before and 12 weeks after rHuEPO administration (50–100 U/kg of dry weight, intravenously, after dialysis, 3 × /week, to increase haemoglobin to 10–12 g/dl). We did not find any significant statistical difference. Re-use was compared in 13 patients in those periods and there was also no significant difference. The comparison was extended to a 3rd period from 12 to 24 weeks in 10 patients under rHuEPO

Fig. 1. Comparison of rHuEPO and haemodialyser re-use. The results are depicted as median and non-parametric 95% confidence interval ($p = 0.418546$; Friedman's two-way analysis of variance).

with stable and partial corrected haematocrit and haemoglobin (fig. 1), and again no significant statistical differences were found. We think we can safely go on with our re-use programme of cuprophane hollow-fibre dialysers in patients with clinical criteria for rHuEPO treatment of renal anaemia.

References

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