Myeloperoxidase serves as a marker of oxidative stress during single haemodialysis session using two different biocompatible dialysis membranes

Sir,

We read with interest the report by Wu et al. on oxidative stress during haemodialysis [1]. Unfortunately, times and access sites for blood sampling were not adequately chosen to allow final conclusions on myeloperoxidase (MPO) kinetics.

In our own trial on eight end-stage renal disease (ESRD) patients using identical blood and dialysate flow rates (300 and 500 ml/min, respectively), but an FX60 dialyser (Helixone®) and ultra-pure dialysate, we measured MPO before and after passage through the dialyser. Compared with baseline levels, a highly significant increase of MPO concentrations was observed already after 5 min in arterial (40.1 ± 9.0 to 244.7 ± 69.8 μg/l) and venous (40.1 ± 9.0 to 271.7 ± 85.8 μg/l) blood. Differences between arterial and venous values also reached significance (P < 0.028). After further increasing the levels slightly at 10 and 15 min, peak concentrations were reached at 30 min, being 263.7 ± 122.3 μg/l (arterial) and 310.9 ± 132.8 μg/l (venous). In the further course of dialysis, MPO slowly decreased without reaching baseline values after 240 min.

Our data confirm that MPO is a useful parameter for oxidative stress, but peak concentrations are not observed before 30 min. Arterio-venous differences indicate that MPO is generated at least partly in the dialyser. However, before 30 min. Arterio-venous differences indicate that oxidative stress, but peak concentrations are not observed reaching baseline values after 240 min.

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Our data confirm that MPO is a useful parameter for oxidative stress, but peak concentrations are not observed before 30 min. Arterio-venous differences indicate that MPO is generated at least partly in the dialyser. However, early high arterial MPO levels rather suggest other factors, such as shear forces through the blood pump, but not dialysate contamination, to be more important sources for MPO generation.

Conflict of interest statement. None declared.

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