Hemodiafiltration and Oxidative Stress in Dialysis Patients

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We have read with interest the report by González-Díez et al. entitled ‘Effect of a hemodiafiltration session with on-line regeneration of the ultrafiltrate on oxidative stress: Comparative study with conventional hemodialysis with polysulfone’ recently published in *Blood Purification* [1]. We are puzzled by the lack of any acknowledgement in this report of our work that was published in May of 2007 [2]. This oversight is particularly odd as not only the title of González-Díez et al.’s report is almost exactly the same as ours, but both the basic premise and experimental approaches of González-Díez et al.’s paper are virtually identical to the paper we published. Moreover, our conclusion published in 2007 that this approach to dialysis reduces oxidative load, i.e. ‘The results of our study indicate that HFR treatment, compared with standard dialysis, has a lower impact

on oxidative stress’, is echoed in the conclusions of González-Díez et al.: ‘HFR induces less oxidative stress than HD-PS’. Both papers thus suggest that, as stated in the abstract to our paper: ‘Given, the strong relationship between oxidative stress and inflammation and their impact on the long-term cardiovascular complications in end-stage renal disease patients, HFR might have a more beneficial impact in reducing the risk of atherosclerotic cardiovascular disease in dialysis patients’.

That two independent investigations reach the same conclusions can only strengthen the case for the HFR-based approach to oxidative stress-related long-term complication of hemodialysis and will hopefully lead to improved care for dialysis patients, which after all is everyone’s ultimate goal.

We feel that given the above set of facts, some sort of acknowledgement of our previous work in whatever form the journal sees as appropriate is clearly merited.

References

- 1 González-Díez B, Cavia M, Torres G, Abaigar P, Muñoz P: Effect of a hemodiafiltration session with on-line regeneration of the ultrafiltrate on oxidative stress. Comparative study with conventional hemodialysis with polysulfone. *Blood Purif* 2008;26:505–510.
- 2 Calò LA, Naso A, Carraro G, Wratten ML, Pagnin E, Bertipaglia L, Rebeschini M, Davis PA, Piccoli A, Cascone C: Effect of haemodiafiltration with online regeneration of ultrafiltrate on oxidative stress in dialysis patients. *Nephrol Dial Transplant* 2007;22:1413–1419.

Reply

HRF and Oxidative Stress in Haemodialysis

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With reference to your letter to the editor, we would like to clarify the following points:

Firstly, to point out that we are aware of the work published on NDT by Calò et al. in May 2007 [2], which is interesting. Although related to our research work it is not quoted, like other works, because we had to cut down the number of bibliographic references compared to those we had selected at first and chose those studies associated with pre- and post-dialysis that best suited the design of our work. The study of those parameters over 1 year was a reason for a second work which we have just finished, a work that agrees more for its discussion with that mentioned by Calò et al.

If the title of our publication is similar to that of their work, it is definitely due to the need for it to be shorter, as the complete title of our work at first was '*Effect of a hemofiltration session with on-line regeneration of the ultrafiltrate on oxidative stress:*

comparative study with conventional hemodialysis with polysulphone'.

As regards the methodology, ours is a randomized multicenter study, in which, besides the 40 patients included, we selected 20 individuals as a control group, and as oxidative stress we measure the levels of antioxidant enzymes as well as biomarkers of oxidative damage. Calò et al. included 14 patients in a crossed design study and worked with a control group in which they determined the expression of p22phox and PAI-1 proteins, HO-1 and mRNA production and plasma levels of OxLDL. The patient inclusion criteria were similar in both studies, and also similar to those used in other works on dialysis and oxidative stress.

As Calò et al. say in their letter to the editor, the conclusions are very similar as regards the HFR technique, although the parameters measured are different. Also, other studies have reached similar conclusions and not all of them were able to be

quoted in our work, as there is a large number of scientific references in this area.

References

- 1 González-Díez B, Cavia M, Torres G, Abaigar P, Muñoz P: Effect of a hemodiafiltration session with on-line regeneration of the ultrafiltrate on oxidative stress. Comparative study with conventional hemodialysis with polysulfone. *Blood Purif* 2008;26:505–510.
- 2 Calò LA, Naso A, Carraro G, Wratten ML, Pagnin E, Bertipaglia L, Rebeschini M, Davis PA, Piccoli A, Cascone C: Effect of haemodiafiltration with online regeneration of ultrafiltrate on oxidative stress in dialysis patients. *Nephrol Dial Transplant* 2007;22:1413–1419.

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