Dialysate Sodium and Mortality
One Size Does Not Fit All

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In a large, retrospective cohort of maintenance hemodialysis patients, Pinter *et al.* report a 43% lower risk of death in patients exposed to higher (>138 mmol/L) compared with those prescribed lower (≤138 mmol/L) dialysate sodium, regardless of plasma sodium levels.[1]

As stressed by the authors, fluid status was adequately controlled in both groups. This is suggested by the mild interdialytic weight gain and bioimpedance spectroscopy measurements. This point is critical as it might favor survival in the higher–sodium dialysate group. Indeed, it has been recently shown in a randomized clinical trial that dialysate sodium 135 mMol/L was associated with a very small decrease in interdialytic weight gain (−0.3 [−0.5 to 0.0] kg) but with more dialysis disequilibrium symptoms, compared with dialysate sodium 138 mMol/L.[2] Furthermore, raising dialysate sodium from 135 to 140 mMol/L was associated with a 44% reduction in intradialytic hypotension occurrence but a small increase in interdialytic weight gain (0.2 [0.1–0.3] kg).[2] Accordingly, reducing dialysate sodium in patients without major fluid overload might only cause excessive risk of intradialytic cardiovascular stress because fluid status is already adequately controlled.[3] Conversely, raising dialysate sodium in patients in whom euvolemia is not difficult to achieve may just provide benefits on mortality through the reduction of intradialytic hypotension episodes and consequently end organ ischemia without too much concern for an inappropriate increase in weight gain.[4]

Importantly, the difference in dialysate sodium results from differences in practice between the participating centers and not from an individualization of dialysate sodium prescription (78.6% of clinics used default sodium dialysate prescription). Thus, the intentional prescription of lower dialysate sodium in hyponatremic fluid–overloaded patients may have a different impact on mortality. This difficult relationship between dialysate sodium and fluid status raises the question about how future studies should be designed, especially as we experience a paradigm shift toward a "one size does not fit all" approach in the medical community.

Last, it is surprising that such a narrow variability in sodium dialysate (139–140 versus 138 mMol/L, only 0.42% of patients were prescribed a dialysate sodium <137 mMol/L) could explain the observed difference in survival, which might be due, at least partially, to other center-specific practices.

Nevertheless, we cannot deny the unsettling feeling about the results of the study by Pinter *et al.* given the actual worldwide trend toward lowering dialysate sodium, which indeed confirms the dire need for additional evidence on this subject.

Disclosures

Disclosure forms, as provided by each author, are available with the online version of the article at http://links.lww.com/JSN/E693.

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Author Contributions

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See related reply, "Authors' Reply: Dialysate Sodium and Mortality: One Size Does Not Fit All," on page 977, and original article, "Effect of Dialysate and Plasma Sodium on Mortality in a Global Historical Hemodialysis Cohort," in Vol. 35, Iss. 2, pages 167–176.

