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REPLY: End-Stage Renal Disease and Arrhythmic Death



We thank Dr. Weinrauch and colleagues for their useful comments and their interest in our work (1). Although the size of our cohort was small, we would like to underscore that there were no specific exclusion criteria, so our patients can be considered as representative of a French dialysis population.

The documented risk of hypokalemia is a concern in these patients: the risk of low potassium dialysate (KD) has been documented in previous epidemiological studies (2,3). Although pre-dialysis serum potassium concentrations were similar in our study and in the MiD (Monitoring in Dialysis) study (4) cited by Dr. Weinrauch and colleagues, that is, respectively, 4.7 mmol/l (interquartile range: 4.1 to 5.3 mmol/l) (1) and 4.7 mmol/l (interquartile range: 4.2 to 5.4 mmol/l) (4), KD was higher in France, with 46.5% of patients being treated with KD higher than 2 mmol/l (1), whereas virtually all patients in the MiD study were treated with KD of 2 mmol/l (4). Such low values of KD may have led to higher variations of serum potassium concentrations during hemodialysis sessions (2) and to an association with rhythm events (4).

We agree with Dr. Weinrauch and colleagues that dialysate calcium (CaD), particularly at low concentrations, might be also associated with increasing QT dispersion and risk of sudden death (5), despite the fact that we have found no association between CaD and cardiac rhythm events: in this French study, hemodialysis practices were quite homogeneous, because 81.7% of patients were treated with a CaD of 1.5 mmol/l (i.e., 3 mEq/l), 19.9% with a CaD higher than 1.5 mmol/l, and only 1 patient with CaD lower than 1.5 mmol/l (1). This very low range of variation of CaD did not allow sufficient power to detect the effect of CaD on rhythm events. In the MiD study (4), CaD was much lower, with a median of 1.25 mmol/l (2.5 mEq/l), and with very few patients treated with a

CaD of 1.5 mmol/l or higher (see Table 3 in Roy-Chaudhury et al. [4]).

In summary, differences in practices for CaD and KD between France on the one hand and the United States and India on the other hand may explain the discrepancies between the 2 studies. Other hemodialysis parameters linked to sudden death (2,5) were quite different between the 2 studies, such as longer hemodialysis duration and lower weight gain in France. In future prospective trials, much attention will be needed on the technical parameters of hemodialysis, because they are closely linked to the occurrence of sudden death: this might be considered a matter of hope!

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