Sodium balance-neutral sodium profiling does not improve dialysis tolerance

H Iselin, Dimitrios Tsinalis & F P Brunner

BACKGROUND: Modern haemodialysis monitors offer computerised ultrafiltration and sodium concentration profiles which promise better dialysis tolerance. This presumption was tested in chronic haemodialysis patients.

METHODS: Using Fresenius MC 4008S monitors a group of nine patients were dialysed with a given ultrafiltration profile comparing sessions with decreasing sodium concentration (145 to 133 mmol/L) to sessions with constant sodium concentration (138 mmol/L) in random order. The built-in blood volume monitor recorded changes in haematocrit and blood volume during each dialysis. The analyses included dialytic weight loss, interdialytic weight gain and adverse symptoms (hypotensive episodes and muscle cramps).

RESULTS: 321 dialysis sessions, 160 with and 161 without sodium profile, were available for analysis. No significant differences could be detected regarding changes in haematocrit, blood volume and weight in relation to sodium profiling. No significant difference in the incidence of hypotension or muscle cramping was observed with 55 symptomatic dialyses of 160 with sodium profile, compared to 52 symptomatic dialyses of 161 without sodium profile. Interdialytic weight gain and consequent weight loss during dialysis was higher in symptomatic dialyses both with sodium profile or without sodium profile. The same was true of increase in haematocrit and decrease in blood volume, which were greater for symptomatic versus symptom-free dialyses irrespective of sodium profiling.

CONCLUSIONS: Sodium balance-neutral sodium profiling failed to improve dialysis tolerance in a group of stable chronic haemodialysis patients. This may be explained by the fact that vascular refilling as deduced from changes in haematocrit was uninfluenced by sodium profiling.