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A Prospective Intervention Study to Determine Whether Salt Reduction Instruction by the Salt Questionnaire Reduces Inter-Dialysis Weight Gain, Lowers Blood Pressure before Hemodialysis, and Decreases the Incidence of Dialysis Hypotension in Hemodialysis Patients.

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Summary

Background: Heart failure is the leading cause of death in hemodialysis (HD) patients, and fluid overload is the most common cause. Therefore, it is important for HD patients to reduce salt intake. Knowledge of patients' salt intake is expected to motivate them to reduce salt intake and achieve salt reduction. As a method to evaluate salt intake, measurement of sodium excretion through 24-hour urine storage or urine at any time is not applicable to hemodialysis patients, who do not urinate. Furthermore, the method of estimating salt intake based on food intake frequency surveys has not been fully utilized due to inadequate studies on the accuracy of the estimated values. Therefore, recently, we have developed a highly accurate and simple self-administered salt questionnaire. We aimed to determine whether salt intake decreases and inter-HD weight gain decreases, when HD patients are instructed to reduce salt intake using this salt questionnaire.

Methods: Seventy-eight outpatients at a maintenance HD facility were assessed and instructed on dietary salt intake using the salt questionnaire. After one month of dietary guidance, salt intake was assessed again using the salt questionnaire.

Results: The mean age of the patients was 72.2 ± 11.9 years, 47 were male and 31 were female, 23 had diabetic nephropathy as the primary disease, and the median HD vintage was 74 months. Salt intake significantly decreased from 8.41 ± 2.43 g/day before the salt questionnaire intervention to 7.67 ± 2.60 g/day after the intervention ($p = 0.010$).

There was a significant positive correlation between change in salt intake and change in inter-dialysis weight gain relative to dry weight on Monday or Tuesday, 2 days after the end of hemodialysis ($r = 0.24$, $p = 0.037$). Furthermore, the changes in salt intake were significantly positively correlated with the changes in weight gain after adjusting for age, gender, and dry weight ($b = 0.23$, $p = 0.044$).

Conclusion: The salt questionnaire may be an effective tool to reduce salt intake and control weight gain during HD.