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IDWG, salt and water – a survey of dialysis staff

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Our haemodialysis service comprises two teaching hospital-based centres and six satellite units, which merged some years ago. The teaching hospitals were traditionally managed by separate groups of dietitians and dialysis staff. Consequently, there were differences in practice within the service, including the methods used to determine an acceptable interdialytic weight gain (IDWG).

High IDWG is regarded as a negative factor due to associated intradialytic hypotension, interdialytic hypertension and cardiovascular disease.[1] As such, patients with excessive IDWG are frequently advised to limit their daily fluid intake and may be encouraged to reduce their salt intake because of the association between salt intake and thirst.[2] Different members of the multidisciplinary team (MDT) act as advisors in this area. This may lead to confusion and non-compliance if the information is conflicting or provided in a negative manner.[3]

We undertook an audit throughout the haemodialysis service to standardise the advice given to patients. This article reports the results of a questionnaire used to determine how staff respond to excessive IDWG. It also examined their knowledge of the salt and fluid content of common foods.

Method of audit

A questionnaire was sent to 166 medical and nursing staff and dialysis assistants in the haemodialysis units. It aimed to determine their opinion on what an acceptable IDWG is and how they would advise a patient with excessive IDWG.

To examine their knowledge of recommended salt requirements, and the fluid and salt content of common foods, respondents were provided with two lists, each containing nine foods. They were asked to identify those containing more than 100 ml of water and from another list those containing more than 1 g of salt.

Study results

The response rate was 63%, of which 12% were medical staff, 27% were dialysis assistants and 62% were nursing staff. The median time staff spent working in the renal field was six years (range: two weeks–38 years).

The staff were asked what the maximum amount of fluid was that a stable patient should lose in one haemodialysis session. Fifteen per cent reported 2 kg, 16% reported 3 kg, 38% reported 1 kg/hour and 13% reported 5% of dry body weight. Most respondents chose the figure that our units have traditionally used in an attempt to reduce the frequency of intradialytic hypotensive episodes. A ceiling of 1 kg/hour fails to recognise that our patients come in various shapes and sizes with varying total body water volumes. This is important because a 3 kg ultrafiltration for a 38 kg woman is far more likely to cause problems than the same volume removal in a 120 kg man. When faced with a patient demonstrating excessive IDWG, 49% would refer to the dietitian, 29%

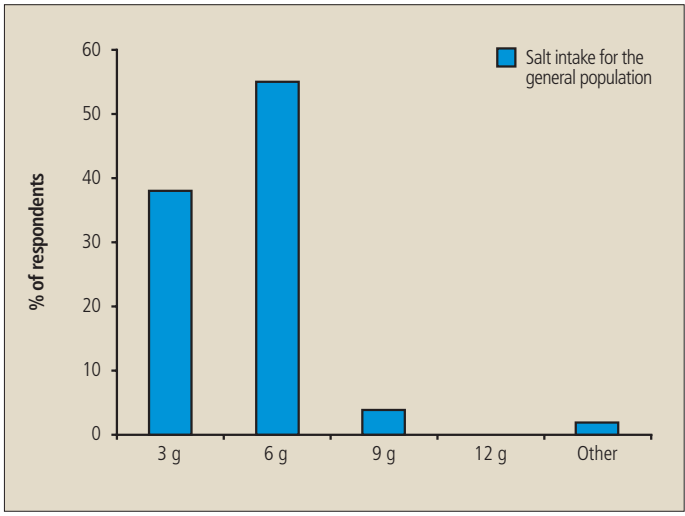

Figure 1. Staff awareness of recommended daily salt intakes for the general population

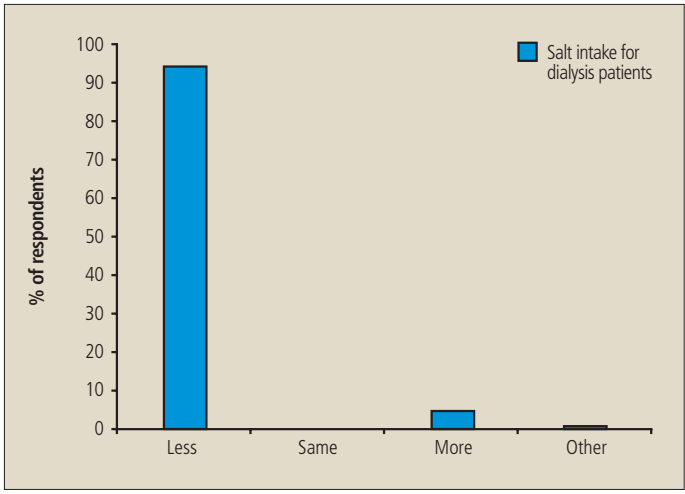

Figure 2. Staff awareness of recommended daily salt intakes for dialysis patients: is it greater, smaller or the same as for the general population?

would refer to the doctor, 74% would offer advice on how to reduce IDWG, of which 8% would advise on fluid restriction only, and 90% would advise on fluid and salt restriction.

Figures 1 and 2, page 12, indicate staff awareness of recommended daily salt intakes. Half of the respondents knew the daily salt recommendations for the general population but none knew the recommendations for renal patients. Figure 3 shows the respondents' knowledge of the salt and fluid content of common foods. No respondents achieved 100% correct answers for fluid content but the median result was six correct responses from nine. Only 1% achieved 100% correct answers for the salt content, but the median result was five.

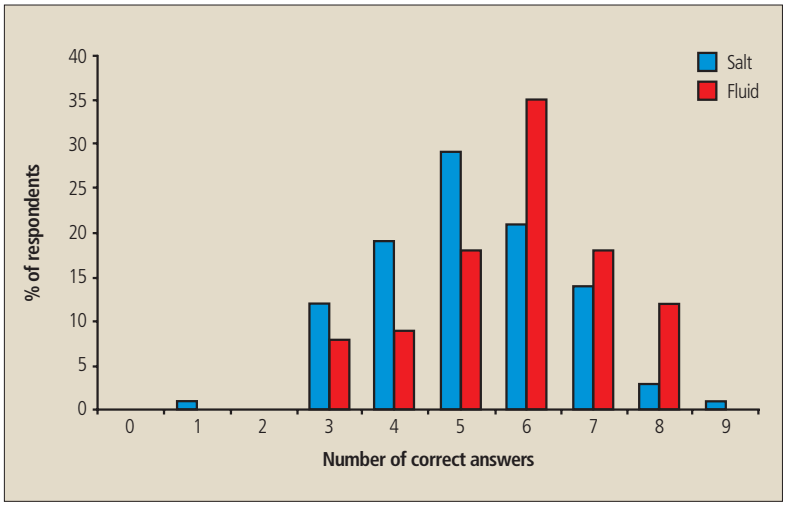

Figure 3. The number of correct answers to the salt and fluid content questions

The results in context

The majority of staff are prepared to offer advice to patients on how to limit their fluid intake and restrict their salt intake. However, the results indicate that this advice may be inaccurate. The conflict caused by the provision of inaccurate information given by different members of the MDT may lead to confusion and poor compliance.

Haemodialysis patients spend a significant amount of time at the dialysis unit. A positive relationship with members of the MDT may lead to greater patient satisfaction and compliance with treatment recommendations.[3] Martin *et al* showed that satisfaction with the nurse and technician (dialysis assistant) had a positive effect on the control of IDWG.[4]

IDWG is often interpreted as a negative factor due to the risk of developing hypertension and cardiovascular disease.[1] Placing greater emphasis on reducing the salt intake of haemodialysis patients and the dialysate sodium concentration can effectively lower hypertension.[2,5,6] IDWG may be significantly reduced, without imposing a fluid restriction; the patient drinks less as their thirst is reduced. Figure 4 shows the mean and spread of predialysis sodium levels over a six-month period for 375 maintenance haemodialysis patients in the care of our centre. The great majority arrive for dialysis with sodium levels in the normal range of 135 to 145 mmol/l, suggesting that only a minority of patients are drinking due to reasons other than sodium-induced thirst.

It is encouraging that the majority of our respondents stated that they would advise on fluid and salt; however, we did not determine on which they would place greater emphasis. Few of the respondents stated they would advise on fluid intake only. The approach to management of IDWG was discussed by the European Dialysis and Transplant Nurses Association/European Renal Care Association (EDTNA/ERCA) journal club in 2005.[7] The participants unanimously supported the approach of reducing sodium intake rather than restricting fluid.

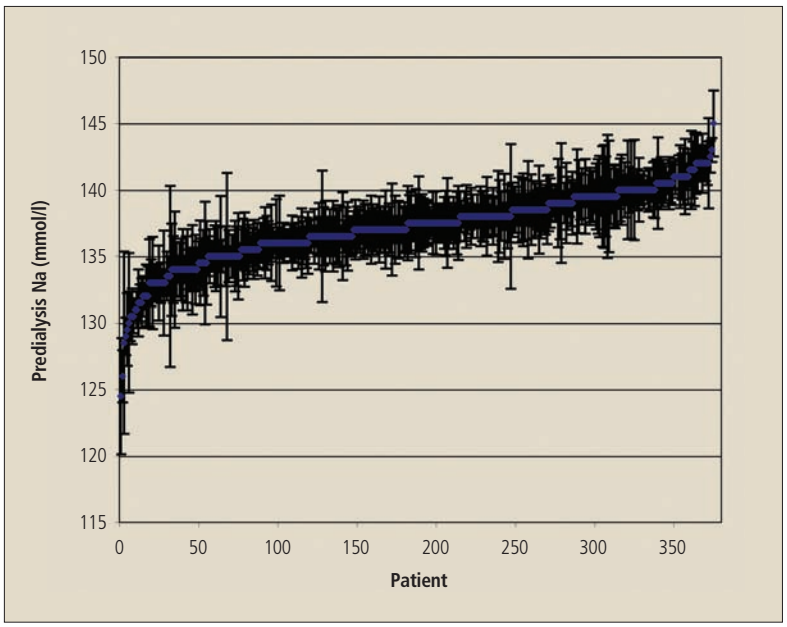

Figure 4. The mean predialysis sodium (Na) level over six months in 375 maintenance haemodialysis patients

Respondents had a good knowledge of the recommended daily salt intake for the general population, but the majority felt haemodialysis patients should be consuming less. No respondents identified that the 6 g of salt/day advised for the general population is equivalent to the 80–100 mmol/l no added salt (NAS) diet recommended for the haemodialysis population. A NAS diet can be simple. It involves cooking at home without adding salt to the food and avoiding obvious salty foods. It is inexpensive and need not be limiting or unpalatable. However, due to social constraints, in addition to other dietary restrictions, haemodialysis patients may rely on ready-made meals and other convenience foods, which have a significant salt content. Food manufacturers have acknowledged the importance of reducing the salt content of food

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products, which may help to promote greater dietary compliance.

Figure 3, page 13, shows the inaccuracies in the respondents' knowledge of the salt and fluid content of common foods. This error may have been due to the respondents having poor knowledge of, or being unable to visualise, portion sizes. They may have identified foods from their experience of taste and texture. Patients may have the same difficulties, highlighting a need for detailed resources.

The renal dietitian is usually responsible for providing nutritional education, including information on salt and fluid. However, due to the unique relationship between haemodialysis patients and staff on the dialysis unit, the latter should be regarded as a useful resource. If they are provided with up-to-date and evidence-based training on how patients should be educated on salt and fluid, this would ensure patients receive consistent advice and help to promote compliance.

The outcome

We have proposed a change within the haemodialysis unit regarding the management of IDWG. Greater emphasis should be placed on dietary salt intake, which will require more intensive training for dialysis staff. We have undertaken a regional review of educational resources on salt for patients. We hope to create information for both patients and staff, advising on the NAS diet, with the possibility of producing resources nationally to ensure consistent advice is provided ■

Key points

- **Our audit revealed that medical and nursing staff are very willing to offer advice to patients but are often inaccurate regarding foods containing salt and fluid.**
- **Greater emphasis should be placed on dietary salt intake, which will require more intensive training for dialysis staff and a review of patient resources.**

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