Roula Galland, MD

Synopsis from the article: Short Daily Hemodialysis and Nutritional Status in Patients with Chronic Renal Failure. Galland R, Traeger J. *Seminars in Dialysis* 2004;17:104-8.

Protein-energy malnutrition is a common problem in patients undergoing maintenance hemodialysis. Malnutrition may be a consequence of multiple factors, including poor food intake due to anorexia, heightened protein and energy requirements, and an unfavorable inflammatory status. We report the effect of raising dialysis frequency on nutritional status.

Seventeen patients maintained on standard hemodialysis (SHD), 4 to 5 hours for each session, three times/week for 9.6 ± 8.4 years were treated instead with short daily hemodialysis (sDHD), 2 to 2.5 hours for each session, six times/week, for a period of 39.1 ± 23.5 months. Dietary evaluation, anthropometrics and biochemical parameters were performed while on SHD, after one year of sDHD and at the end of the sDHD period.

Daily protein intake rose from 1.21 ± 0.27 to 1.51 ± 0.47 and 1.51 ± 0.37 g/kg/day. Energy intake climbed from 33.6 ± 9.5 to 38.3 ± 10.9 and 39.4 ± 9.4 Kcal/kg/day. nPNA value increased from 1.19 ± 0.34 to 1.34 ± 0.43 and 1.37 ± 0.37 g/kg/day. Biochemical indicators increased too: serum albumin level from 40.2 ± 3.3 to 44.5 ± 4.6 and 45.1 ± 4.1 g/L, serum prealbumin value from 0.32 ± 0.06 to 0.38 ± 0.09 and 0.36 ± 0.09 g/L. These improvements were associated with a gain in body weight from 62.0 ± 10.6 while on SHD to 64.3 ± 10.2 after one year of sDHD and 65.5 ± 9.7 kg at the end of the sDHD period. All these improvements were statistically significant between the SHD and the sDHD regimens.

Increased appetite and food intake were observed in all patients treated with daily dialysis, probably as a consequence of a sense of general well being, less dietetic restrictions, a diminution in prescribed drugs, a reduction of urea retention and fluid overload, a better dialysis performance, and an improvement in protein metabolism disturbance as a result of the presence of a more physiological milieu.

In conclusion, an increase in frequency is more important than an increase in dialysis dose. Short daily hemodialysis appears to be a suitable method to improve nutritional status in dialysis patients.

Commentary by Todd S. Ing, MD
Drs. Galland and Traeger, pioneers in short daily hemodialysis, have shown definitively that short daily dialysis can improve the nutrition status of dialysis patients. The above is an important finding because a large number of dialysis patients are malnourished. In this regard, it is well known that malnutrition is accompanied by a high incidence of mortality and morbidity.

Reference:
Galland R, Traeger J, Arkouche W, et al. Short daily hemodialysis rapidly improves nutrition status in hemodialysis patients. *Kidney Int* 2001;60:1555-60.