

also correlated with the cause of end-stage renal disease: patients with chronic glomerulonephritis or chronic interstitial nephritis were more likely to opt for self care.

As no comparison was performed with patients who received no predialysis education, it is not possible to conclude that the education program affected patients' treatment choices. In this center, however, patients made choices that allowed in-house resources to be focused on those with more complex medical needs.

Rebecca Doherty

**Original article** Goovaerts T *et al.* (2005) Influence of a pre-dialysis education programme (PDEP) on the mode of renal replacement therapy. *Nephrol Dial Transplant* 20: 1842–1847

### Treatable risk factors for peritonitis in children undergoing peritoneal dialysis

In pediatric peritoneal dialysis populations, the risk of developing peritoneal inflammation has been shown to be greatest in the youngest patients. A recently published retrospective analysis of data from Austria has confirmed this correlation, and identified other determinants of risk that are independent of age. Improved management of these age-independent risk factors could curb the growing incidence of peritonitis in this ever-younger dialysis population.

The medical records of 30 children who received peritoneal dialysis—primarily via single-cuff catheters—at the Children's University Hospital in Vienna were analyzed. Of the 13 who were younger than 2 years of age, 77% suffered at least one peritonitis episode, compared with only 30% of the 17 patients older than 2 years of age. Younger children were also more likely to suffer recurrent bouts of peritonitis.

Exit-site infections and low urine volume were found to independently predict peritonitis burden per patient. Low rates of residual glomerular filtration and normalized protein catabolism, as well as an automated procedure (as opposed to continuous ambulatory peritoneal dialysis), were also correlated with indices of poor peritonitis outcomes.

In light of their findings, Boehm and colleagues suggest that amendment of management programs might reduce the risk of children developing peritonitis during peritoneal dialysis. Although requiring confirmation in large prospective trials, introducing antimicrobial prophylaxis,

optimizing nutritional status and increasing dialysis dose could improve the outlook for this young cohort of the dialysis community.

Rachael Williams

**Original article** Boehm M *et al.* (2005) Risk factors for peritonitis in pediatric peritoneal dialysis: a single-center study. *Pediatr Nephrol* [doi: 10.1007/s00467-005-1953-2]

### Online hemoglobin monitoring could improve management of anemia in hemodialysis patients

Less frequent blood tests would undoubtedly enhance the quality of life of hemodialysis patients. Optical devices for measurement of hemoglobin concentration have been incorporated into dialysis monitors for some time, but have only been used to assess relative blood volume. Now researchers have shown that the Hemoscan<sup>®</sup> (Cytometrics Inc., Philadelphia, PA)—a device that surveys the light absorbed by blood flowing through a dialysis machine—can continuously measure absolute hemoglobin concentrations with accuracy and reliability equivalent to laboratory-based determinations.

Chesterton *et al.* calibrated Integra<sup>®</sup> dialysis machines (Hospal, Bologna, Italy) by inputting laboratory values for hemoglobin from blood collected during Hemoscan<sup>®</sup>-monitored hemodialysis sessions. Standard linear regression was used to align the two data sets. Mid-dialysis laboratory and Hemoscan<sup>®</sup> hemoglobin concentrations from 15 patients (mean age 65 years) were then compared. The degree of correlation was high ( $r^2 = 0.89$ ), and was maintained over the 7-month study period ( $r^2 = 0.97$ ). Hemoscan<sup>®</sup> overestimated hemoglobin levels by 1.3% initially, and underestimated them by 1.0% after 7 months.

The authors also compared predialysis laboratory hemoglobin values with data collected from networked Hemoscan<sup>®</sup> monitors and stored in a central computer. Storage of data in this way permits offline collation of values and detection of changes in hemoglobin over time. Precision ( $r^2$ ) of stored Hemoscan<sup>®</sup> values compared with laboratory-determined hemoglobin concentrations was 0.75.

Continuous measurement of hemoglobin levels using optical monitors will facilitate more rapid correction of anemia than the currently recommended practice of laboratory testing every 4 weeks. Costs and patient discomfort