

## GLOSSARY

## MDRD EQUATION

Modification of Diet in Renal Disease equation; used to estimate glomerular filtration rate

## Locking catheters with trisodium citrate reduces infection during hemodialysis

Catheter use in hemodialysis can lead to infection and reduced blood flow caused by coagulation; heparin has traditionally been used to maintain catheter patency but can cause systemic anticoagulation and persistent bleeding. Weijmer and colleagues compared heparin with trisodium citrate (TSC), a local anticoagulant with antimicrobial properties, for use in catheter locking. Their multicenter, double-blind, randomized, controlled trial has demonstrated that using TSC rather than heparin to lock catheters during hemodialysis for end-stage renal disease leads to a reduction in catheter-related bacteremia (CRB) and other complications.

Patients were randomized to either 5,000 U/ml unfractionated heparin or a 30% solution of TSC. Catheter type was determined by the treating physician. Tunneled cuffed catheters—recommended when catheterization is expected to last longer than 4–6 weeks—were used in 98 patients; untunneled catheters were used in 193. Results showed a reduction in CRB ( $P=0.01$ ), catheter removal due to complications ( $P=0.005$ ), and major bleeding episodes ( $P=0.01$ ) in the TSC group compared with the heparin group. Neither agent was superior in terms of flow maintenance, and premature removal as a result of flow problems was independently predicted only by use of an untunneled catheter. The study was halted early because of the significant difference in CRB between the groups.

The authors conclude that TSC is effective and safe, resulting in only minor, short-lived adverse effects immediately after locking, and reducing the impact of infection and premature catheter removal on patients.

*Rebecca Doherty*

**Original article** Weijmer MC *et al.* (2005) Randomized, clinical trial comparison of trisodium citrate 30% and heparin as catheter-locking solution in hemodialysis patients. *J Am Soc Nephrol* 16: 2769–2777

## Birth weight, gestational age and the risk of renal disease

Intrauterine growth retardation has been linked to the development of smaller kidneys and

might be a risk factor for renal disease in adulthood. To explore this issue, Keijzer-Veen and colleagues have carried out a prospective, follow-up study of glomerular filtration rate and microalbuminuria in young adults who were born very prematurely.

The study included 422 individuals aged 19 years, born at a gestational age of <32 weeks with a mean birth weight of 1.3 kg. All were survivors of the Project on Prematures and Small for Gestational Age Infants (POPS) cohort, recruited in the Netherlands in 1983. The extent of intrauterine growth retardation was assessed by adjusting birth weight for gestational age. Participants were then defined as 'small for gestational age' (SGA) or 'appropriate for gestational age' (AGA).

Although renal function was normal in all participants at age 19 years, associations were found between intrauterine growth retardation and unfavorable renal parameters. Mean glomerular filtration rate, measured using both the Cockcroft–Gault equation and the simplified MDRD EQUATION, was lower in the SGA group than in the AGA group. In addition, the prevalence of microalbuminuria in the SGA group was more than twice that found in the AGA group.

The authors state that these results support the idea that growth retardation *in utero* has an adverse effect on the development of the kidneys, and that this might predispose individuals to renal disease later in life.

*Ruth Kirby*

**Original article** Keijzer-Veen MG *et al.* (2005) Microalbuminuria and lower glomerular filtration rate at young adult age in subjects born very premature and after intrauterine growth retardation. *J Am Soc Nephrol* 16: 2762–2768

## Parathyroidectomy might reduce cardiovascular calcification in dialysis patients

Cardiovascular calcification—a risk factor for cardiac death—is prevalent in dialysis patients. Results of a small prospective investigation indicate that parathyroidectomy might reduce or stabilize deposition of calcium salts in cardiac tissue. Subject to confirmation in controlled studies, surgery might therefore be preferable to newer therapies such as calcimimetics and vitamin D, for the treatment of individuals with