and those who remained nephrotic after a 6 month observation period on angiotensin-converting-enzyme inhibitors or angiotensin receptor blockers were randomized into two groups: 28 (11 MN, 17 FSGS) received MMF 2 g/day for 6 months with 0.5 mg/kg of prednisolone daily for 8–12 weeks; and 26 received conventional treatment (prednisolone 1 mg/kg/day for 3–6 months for FSGS, $n = 16$, alternating monthly cycles of steroids and cyclophosphamide for 6 months for MN, $n = 10$). The proportion of patients achieving complete or partial remission was similar in the two groups (MMF 68%, conventional treatment 73%). Patients with FSGS who were treated with MMF, however, achieved remission faster (5.6 weeks vs 10.2 weeks) and received a lower total dose of steroid (1.9 g vs 7.3 g) than those on conventional treatment. The numbers of relapses and infections were similar in the two groups.

MMF could be a helpful alternative treatment for MN and FSGS in patients, such as children or diabetics, who are sensitive to the toxic effects of steroids or cytotoxic agents.

Original article Senthil Nayagam L *et al.* (2008) Mycophenolate mofetil or standard therapy for membranous nephropathy and focal segmental glomerulosclerosis: a pilot study. *Nephrol Dial Transplant* **23:** 1926–1930

Reasons for, and the need to address, low fistula use in US hemodialysis patients

In spite of the superiority of native arteriovenous fistulae over other types of vascular access, fistula placement in US patients undergoing hemodialysis lags behind that in European patients. Two articles have sought to find reasons for and solutions to this problem.

Saran *et al*. analyzed questionnaires completed by specialists at 222 hemodialysis centers in 12 countries participating in the Dialysis Outcomes and Practice Patterns Study II. They found that specialists who placed more fistulae during training and those who reported "extreme or much" emphasis on vascular access creation during training were more likely to create a fistula than a graft (adjusted odds ratios 2.17 per 2-fold increase in the number of fistulae created during training, $P < 0.0001$, and 2.74 vs "no" emphasis, $P = 0.0002$, respectively). Creation of at least 25 fistulae during training was associated with 34% and 40% reductions in the risks of primary and secondary fistula failure, respectively, compared with creation of 1–24 fistulae. US specialists had the lowest average number of fistulae placed during training (16) and the lowest perceived emphasis on vascular access creation during training.

Chand *et al*. highlight the low use of arteriovenous fistulae in US children and attempt to dispel misconceptions that discourage fistula placement in children, such as intolerance to cannulation. They introduce the International Pediatric Fistula First Initiative to advocate the creation of fistulae as the vascular access of choice in pediatric patients undergoing hemodialysis (including those who weigh <20 kg).

Original articles Saran R *et al.* (2008) Enhanced training in vascular access creation predicts arteriovenous fistula placement and patency in hemodialysis patients. *Ann Surg* **247:** 885–891
Chand DH *et al.* (2008) International Pediatric Fistula First initiative: a call to action. *Am J Kidney Dis* **51:** 1016–1024

Heparin contaminant causes adverse effects via the kallikrein system

In January 2008, clusters of acute hypersensitivity reactions, characterized by hypotension and tachycardia, were reported in patients undergoing dialysis in the US. Investigations revealed that these reactions were caused by contaminated heparin samples, leading to two recalls of the drug. The contaminant was identified as an unusual oversulfated form of chondroitin sulfate (OSCS), but no biological link between OSCS and the adverse clinical events had been established. Kishimoto *et al*. have now determined that OSCS leads to the observed adverse events via activation of kallikrein, which can stimulate production of the vasoactive mediator bradykinin.

The authors showed that OSCS-contaminated heparin samples induced kallikrein amidolytic activity in human plasma at clinically relevant concentrations of heparin. Purified and synthetic OSCS also caused kallikrein activation, whereas uncontaminated heparin had no effect on the kallikrein system. Furthermore, contaminated heparin induced generation of the complement protein fragments C3a and C5a, which are potent anaphylatoxins. Experiments conducted