key points

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End-stage renal disease (ESRD) describes loss of kidney function which is both substantial and irreversible. It is associated with acute life-threatening complications such as hyperkalaemia and pulmonary oedema, and chronic metabolic derangements that cannot be sustained in the long-term.

Patient education is paramount in ESRD management. The form of RRT instituted should primarily be based on patient preference subsequent to an individually tailored education programme from specialist staff. This programme needs to take into account the patient's comorbidities and any contraindications to specific modalities of RRT.

Transplantation replicates normal renal physiology much more closely than either dialysis modality. Assessment for transplantation requires consideration of the patient's suitability for general anaesthetic and surgery. Patients need to have an adequate blood supply and urinary drainage, and space for a kidney. They must also be suitable candidates for long-term immunosuppression.

Ideally patients with ESRD should have a pre-emptive transplant before they require dialysis. Ninety per cent of recipients of a live donor transplant in the UK in 1999-2001 were alive ten years later, compared with 74% of deceased donor recipients.

There is no conclusive evidence that either dialysis modality is superior, and unless there are obvious reasons why one therapy is unsuitable, patient preference is usually the deciding factor. Peritoneal dialysis (PD) does not provide the same level of fluid and toxin removal as haemodialysis (HD) and many patients will be forced to transfer to HD within two to three years as PD gradually loses effectiveness.

The majority of those on maintenance dialysis in the UK are on hospital-based haemodialysis. One of the major limitations is the dependency on thrice weekly hospital attendance. Home HD allows increased frequency of dialysis which is associated with improved outcomes and should be considered particularly for younger patients where transplantation is not an option.

For those who will be suitable for transplantation, optimum management of diabetes, smoking cessation, weight loss, and general fitness is crucial in facilitating this. Involvement with the patient and his/her family in advising on the advantages of live donor transplantation is also valuable. Patients may be unaware, for example, that a genetic relationship is not essential in order to donate a kidney.