Standards for patients with renal failure

A recent report aims to improve the quality of care for adults with serious kidney failure. An expert committee sets out the recommended standards of care for patients who may need dialysis, transplantation or other treatment for renal disease. This report summarises their work.

Renal diseases account for at least 7,000 deaths each year in the UK. Over 100 different diseases may affect the kidneys. Some may present early with symptoms such as pain, blood or protein in the urine, peripheral oedema and will heal with few consequences, others present insidiously and progress undetected until renal failure develops.

Renal failure may be acute and reversible or chronic and irreversible. The former occurs when blood supply is compromised by, among other things, crush injuries, heart failure, overwhelming infection or poisoning. Chronic renal failure, in which the kidney is slowly destroyed over a long period, is more common and the insidious nature of the disease means that patients often present late when little can be done.

Causes and prevention Diseases which cause renal failure include:

- Auto-immune disease such as glomerulonephritis is triggered by infection or tissue changes. Suppression of the immune response makes only a small impact and most patients progress to end stage renal failure.
- Systemic disease may be caused by systemic lupus, vasculitis and poorly controlled diabetes. Good lifelong control of diabetes is crucial in preventing renal failure.
- The effects of high blood pressure can be reversed by early detection and treatment. Hypertension is a common cause of renal failure in patients of African origin.
- The commonest cause of obstruction is an enlarged prostate and although only a small number of men develop renal failure, prostatism is a major cause of renal failure in men over the age of 70.
- Urinary tract infections may cause scarring of the urinary tract in children or adults with pre-existing obstruction.
- Polycystic kidney disease accounts for about 8 per cent of all kidney disease in the UK. It may cause few symptoms until middle age even though it is present at birth.
- Disease of the renal blood vessels is particularly common in elderly people.
- Acute renal failure occurs when a patient with no previous renal condition shows a rapid increase in renally excreted substances in the blood. Causes include surgical interventions, multiple trauma, obstetrics and renal embolism. Patients over 50 years are unlikely to survive although recovery is good in younger people.

RENAL REPLACEMENT TREATMENT

Renal dialysis The term renal replacement therapy describes all treatments for end stage renal failure which remove waste products from the body in the absence of normal kidney function. Treatments include dialysis, in which waste products from the blood diffuse across an artificial membrane. The main disadvantage of this treatment is that some form of permanent access to the blood must be used in every treatment session. Peritoneal dialysis involves introducing a dialysis fluid into the peritoneal cavity where it must be held for about six hours and repeated three or four times each day. Neither of these treatments correct the loss of substances secreted by the normal kidney such as erythropoietin and vitamin D.

Renal transplantation Renal transplantation replaces all the kidney's normal functions. A single kidney is placed in the pelvis close to the bladder to which the ureter is connected. The kidney is attached to an artery and a vein. Early rejection of the graft has been overcome using drugs such as cyclosporin and steroids, although these are not without risk. Heart disease, strokes and other vascular disorders are more common in transplant patients than in the population. All transplanted kidneys are slowly rejected and many patients require a subsequent transplant or even two.

It is now recognised that whatever legislation is adopted and whatever the social climate, there will always be a shortage of human kidneys for...
transplantation. This will be the case however quickly kidneys are retrieved from the newly dead and however many kidneys are donated. Xeno-transplantation (transplantation of animal kidneys) is a hopeful but remote solution.

**Renal services** The primary objective of all renal services is the early detection and treatment of renal disease and its complications. This activity may be shared between hospital and primary care. Most patients are treated in their own homes with some attending hospital regularly for dialysis. Renal services are mainly concerned with the prevention and management of renal disease, renal transplantation and emergency work.

**GUIDELINES AND AUDIT**

As with all standards, guidelines and audit, the population to be monitored must be consistent and well defined and the interventions examined must be known to be effective. The standards and guidelines recommended by the Renal Association and the RCP are categorised in line with the treatments available and described above.

**Standards for haemodialysis** The expert panel specifies standards for pre- and post-dialysis blood pressure and biochemical variables, such as potassium, phosphate and hormones. In the absence of evidence that the frequency of dialysis improves survival, the panel recommends that the custom of thrice weekly dialysis be continued. Although it is not possible to set standards in psychosocial welfare, all units should provide programmes for the education, counselling and social support of those in renal failure and their families.

**Standards for peritoneal dialysis** The most significant risk associated with continuous ambulatory peritoneal dialysis (CAPD) is underdialysis resulting in protein malnutrition. The panel emphasises the importance of correct hygiene and constant calibration when peritoneal dialysis is used at home. Peritonitis is the most serious complication of CAPD and frequent episodes will weaken the peritoneal membrane. Although its incidence is on the decline, injudicious use of antibiotics has caused resistant organisms to emerge.

**Standards for transplantation** Renal transplantation is, at the moment, the most cost effective treatment for end stage renal failure. The demand for viable kidneys outstrips supply by over 30 per cent. This means that the available kidneys must be used optimally and be made available equitably. In the UK, organ allocation is ad hoc and debate continues about how best kidneys should be allocated. International allocation, the use of non-heart-beating organs and the use of co-operative networks have all been examined. This is why the expert panel has set standards for the allocation, volume, maintenance, matching and survival of cadaver and living relative organs.

**Standards for acute renal failure** The expert panel recommends that people with this condition are nursed in a critical care environment using filtration and dialysis. Patients with uraemia and electrolyte imbalance not needing dialysis should also be managed appropriately.

**Standards for chronic renal failure** Patients with progressive renal disease need careful follow up, monitoring, early assessment and specialised treatment. Control of hypertension, particularly with angiotensin converting enzyme inhibitors, is the only intervention known to slow the progress of chronic failure. Because of the uncertainties of many of the available treatments, there are obvious advantages in teaching patients to monitor their own condition.

**INFECTION CONTROL**

All renal transplant units require easy access to a microbiology service. All patients with chronic or acute renal failure should be managed as if they were chronic HIV and hepatitis viruses carriers until they are tested. Recognised universal precautions designed for the protection of staff and to prevent cross-infection between patients are an essential discipline in dealing with dialysis patients. Where possible, immunisation should be offered to staff who should always strictly observe barrier precautions against exposure to blood together with good hygiene and infection control in the treatment of all dialysis patients. Units should have a policy for the reporting and management of blood exposures.

**Methicillin-resistant Staphylococcus aureus** Increasing numbers of patients are becoming colonised with MRSA and although it is no more pathogenic than other staphylococci, some virulent strains have emerged. Patients at high risk of being colonised, such as those admitted from a known source of the disease, should be assumed to be contaminated unless otherwise proven. The same applies to other resistant organisms.

**CONCLUSION**

Quality of life is a crucial consideration in chronic disease management. Unfortunately, despite a great deal of work to identify reliable measures, such as those which measure function and those which measure mood, there are still no agreed methods upon which to base audit measures for quality of life.