Renal Transplantation in Diabetes

Advanced diabetic neuropathy is a fatal disease. At this stage patients usually have multiple diabetic complications—proliferative retinopathy (many are blind), arterial disease, hypertension, and neuropathy, which may affect the autonomic innervation of the bladder and lead to urinary tract infection. Some of them are too sick for any but the most conservative measures. Chronic dialysis programmes have proved unsatisfactory in comparison with those for non-diabetics, not only is mortality high, but there is a tendency for neuropathy and perhaps retinopathy to deteriorate. For these reasons many centres are unwilling to include these patients in their dialysis programmes. In contrast, relatively uncomplicated diabetics with glomerulonephritis or other forms of renal disease are usually suitable for long-term treatment and should be assessed more in terms of their renal disease than their diabetes.

A recent symposium in Minneapolis reviewed the management of diabetic end-stage renal disease. The results of renal transplantation were reported from several centres: this is now probably the most promising treatment, especially when live related donors are used. Most experience has been obtained in Minneapolis itself, where of 63 patients there were at the time of the symposium 45 survivors of between 1 and 57 months, 43 of them with functioning kidneys. Survival was, however, less than for non-diabetics, and much poorer results obtained when cadaver kidneys were used. Urological complications after transplantation were commoner in diabetics, and a neurogenic bladder may be a lethal complication because of intractable urinary infection. Major arterial disease also bedevils the diabetic group, and myocardial infarction and strokes were much commoner causes of death than in non-diabetics.

Reversal of the remaining major diabetic complications does not usually occur after renal transplantation. The Minneapolis group believes that visual acuity which had been deteriorating before transplantation tended to stabilize or occasionally improve, though the course of diabetic retinopathy is unpredictable even under more controlled conditions. An improvement of muscle power was observed in patients disabled from motor neuropathy, and this is in keeping with other similar observations in non-diabetics. There was, however, no change in motor nerve conduction. Gastrointestinal symptoms generally improved, suggesting that they were mostly uraemic in origin. There is still no evidence that transplanted kidneys develop diabetic abnormalities; basement membrane thickening has been reported in the longest survivors, but it is not known whether this is a diabetic change or merely a consequence of transplantation.

With the certain knowledge that diabetics with impaired renal function from diabetic nephropathy will deteriorate and die within a short time and with the impression that retinopathy probably advances much more rapidly as renal failure advances, it may be argued that transplantation should be performed earlier in diabetics, perhaps when serum creatinine levels are 500-700 μmol/l. Yet the treatment is still hazardous, and despite the considerable advances reported at the Minneapolis symposium the question still needs to be asked on every occasion whether it is justified to admit some of these patients to dialysis or transplant programmes.

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