Transplantation and the elderly

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Two diametrically opposed forces have created a dilemma for the transplant physician with respect to kidney transplantation and the elderly. On the one hand the imperative raised by the progressive organ donor shortage has forced a reanalysis of the use of the older donor for renal transplantation. The consequence of such an approach would tend to increase the pool of organs available for transplantation and ameliorate the crisis of increasing waiting lists. On the other hand the increasing success of organ transplantation coupled to the greying of the end-stage renal disease population increases the number of patients who desire and can benefit from a transplant. The dialectic between increasing organ availability and increasing patient applicability for transplant informs the modern approaches to kidney transplantation and the elderly at many centers.

The organ donor shortage is chronic, persistent, and shows no tendency for improvement. In the US, over the last 5 years 5000 cadaveric donors have been utilized of the potential 12000 available supporting approximately 12 000 kidney transplants per annum [1]. Each year the waiting list increases by over 1000 with a backlog of 25 000 patients. Even harvesting
every possible kidney using extant suitability criteria would not reduce the backlog, let alone the new cases entering the waiting list. Therefore, despite altered renal physiology, a consequence of the ageing process, the older donor should be analysed to determine whether adequate or even good graft outcomes can still be achieved, potentially closing the gap between available organs and desirous patients. Data derived from the USRDS and from UNOS have revealed that recipients of older kidneys on average have shorter graft survivals at lower GFR without affecting patient survival rates [1,2]. These decrements in graft outcome for the recipient are real, are magnified at a donor age above 60, and are reflected more in the long-term survival (after 3 years) than in 1-year graft survival. Although graft function and survival is adversely affected by the older donor, results still remain good, which drives continued consideration of the use of these organs. The outcome data permit the conclusion that the donor pool should be expanded to routinely include kidneys up to the donor age of 60 years, that routine peri-harvest renal core biopsies should be used to evaluate the integrity of renal anatomy in donors between 60 and 65 years of age, which might alter the disparity in graft function and outcome in the older donor, and that even older kidneys might be harvested particularly for use in the older recipient when 20–30-year graft survivals are not as important as in younger recipients.

While considering that the older donor may address the problem of inadequate organs for desiring patients, expansion of organ transplantation into the older recipient heightens the dilemma. The greying of the dialysis population provides rationale for consideration of the older donor. According to the USRDS 1993 report, 53% of those patients coming to some form of end-stage renal disease were 65 years of age or more (23781/45153) compared to 28% of individuals requiring renal replacement in 1980 [2]. Although biased by case selection, transplant in the patient 65 years of age or greater reduces the death rate more than threefold (326 per thousand to 97 per thousand) compared to dialysis, basically a consequence of the successful impact of cyclosporin A on transplant outcomes in the elderly recipient [2]. The older recipient actually exhibits similar organ survival as the young but loses the allograft more commonly to death than to rejection [3,4]. One can conclude that giving a transplant to an older individual is not ethically a ‘waste’ of a short supply resource since the longevity of the organ is equivalent young and old. Ismail and colleagues in an earlier communication have developed an algorithm of the approach to end-stage renal disease in the elderly individual which seems appropriate [4].

The transplant physician is confounded by his very success. There is an expanding group of patients who both want and can benefit from an organ transplant, of which the elderly individual is an example, with a stagnant donor pool which drives the physician to examine relaxation of previous strictures from organ harvest. Newer immunosuppressive strategies continue to exacerbate this dilemma and demand continued innovative approaches for the most effective means of managing the end-stage renal disease population.

References

2. Annual Data Report of the United States Renal Data System (USRDS) 1993