Point of view

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Kidney transplants from living donors: the neglected opportunity

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An intriguing phenomenon in transplantation is the remarkable variation in the use of kidneys from living donors. In France [7] and Eurotransplant [3], approximately 1–2 living donor kidneys are transplanted per million population (pmp) per year. In the United Kingdom the rate is 2–3 [5] and in the United States 7–8 [8] living donor transplants pmp per year. There is also great variation between transplant centers. In a recent study conducted in the United Kingdom, the percentage of such transplants ranged from 0 to 25 [5], and in the United States there are both strong proponents [11, 17] and those who regard the use of living donors as unjustified [16].

Donor practice has changed over the past 25 years. The frequent use of living related donors in the 1960s has been attributed to the lack of dialysis facilities [7] and the poor results with cadaveric kidneys [16]. With the expansion of dialysis facilities and improvement in cadaveric transplantation results in the 1970s and 1980s, cadaveric kidneys became the predominant donor source. However, transplant statistics clearly demonstrate that the gap between demand and supply of cadaveric kidneys gets wider every year and that the organ shortage continues [14].

The incidence of end-stage renal disease requiring active therapy is at least 50–60 patients pmp per year. Although indications for transplantation clearly vary, even a conservative policy setting a target of 45 transplantations pmp per year (including retransplantations) would provide less than 80% of all needy patients with the best and least expensive treatment available, i.e. transplantation.

In 1988 kidney transplant activity in Eurotransplant was 29.4 pmp [3] and in the United Kingdom it was 26.8 pmp (G. Proud, personal communication), including the small number of living donor transplants mentioned above. The constant kidney shortage is reflected by the growing waiting list. The Eurotransplant waiting list increased from 6605 in 1985 to 9101 by the end of 1988, an increase of 37% in 4 years [3]. This number corresponds to 97.5 patients pmp on the waiting list. In the United Kingdom, 61.4 patients pmp are on the waiting list (G. Proud, personal communication). The number of patients on dialysis but not on the waiting list is not exactly known. However, Kootstra [6] has analyzed the European Dialysis and Transplantation registry and estimates that about 27% of the dialysis population is on the waiting list and that less than 10% of all patients needing transplants actually get them.

There is no indication that the supply of cadaveric kidneys will improve dramatically anytime soon, although measures to increase the supply has lately been intensely debated both in the United States and in the United Kingdom [1, 2, 15, 19, 21]. We do not have reliable information on the number of potential donors dying each year. Estimated figures in the United States [1] are 20000 and in the United Kingdom 4000 [2]. If those figures are correct, between 130 and 160 cadaveric kidneys pmp should be available each year. The problem is that we do not get them.

Caplan and Welvang [1] have recently documented that required request laws have improved the donor situation in some parts of the United States, but the picture varies from state to state and doctor compliance is far from optimal. Many doctors oppose required request in the United States, and the opposition looks even stronger in the United Kingdom [21]. Starting this year, health authorities in both Sweden and the United Kingdom have been instructed to keep records of all deaths in intensive care units, and doctors may retrospectively be asked to explain the reason for any failure to make requests for organ donation [14]. If any of these measures will increase the kidney supply significantly is still uncertain. It should also be kept in mind that the family often refuses donation when asked for it: 30%–40% of those asked may not give their consent.

Against this background we strongly favor the additional use of kidneys from living related donors. If we do not do so, many dialysis patients will be denied a better life, and the huge costs for dialysis will escalate progressively and place a tremendous burden on health care budgets. Transplant surgeons, both in the United States and the United Kingdom, justify living donor transplants be-

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cause of the shortage of cadaveric grafts and also because the long-term results are better [10, 13].

Our own activity over the last 20 years illustrates the results of a policy of using kidneys from living as well as from cadaveric donors. Representing the two largest centers in Sweden and the only center in Norway, the three centers together serve a population of 9.5 million. During these years our goal has been to offer a kidney transplant to all suitable recipients. Transplantation from a living related donor has been performed whenever possible. By means of an active scheme for procuring cadaveric kidneys, most other patients have received a cadaveric graft. Our combined figures show that 43 patients pmp get a kidney transplant annually: 30 pmp with cadaveric kidneys and 13 pmp with kidneys from living donors (30% LD transplants). As of 1 January 1989, 320 patients were on the waiting list, corresponding to 33 pmp. Thus, the number of transplants exceeded by far the number of patients on the waiting list.

We are aware of the arguments against the use of kidneys from living donors. Perhaps the two most important arguments are the health risks for the donor and the possibility of "kidneys for cash". Both problems were thoroughly discussed in the Transplantation Society meeting in Helsinki in 1986.

According to Starzl [16], the most compelling argument against living donation is that it is not completely safe for the donor. He refers to at least 20 postoperative deaths, most of which have never been published. Our common policy for accepting a living donor is based on a complete normal medical examination with normal blood pressure and a normal renal angiogram. The donor operation is always performed by a senior surgeon and a senior anesthesiologist. Over the years we have performed 1538 donor operations without mortality, and the frequency of major postoperative complications (lung emboli, gastric hemorrhage, wound infection) has been less than 1%. Long-term follow-up studies have not disclosed health problems related to the donor operation [18].

We fully approve of the guidelines of the Council of the Transplantation Society from 1985 [20]: kidneys are not for sale. We know that this has happened in some countries, and the problem has recently been brought to attention both in the public [12] and in the medical press [4]. In 1989 tighter control of transplant activities was on the agenda in the United Kingdom [9], and the Parliament passed a bill to eliminate commercial trading in transplant surgery [22]. The bill prohibits use of transplants from living donors who are not genetically related to the patient; however, important exemptions can be made, such as donation between spouses and from parents to their adopted children. Those guidelines are in keeping with our policy.

We conclude that volunteer living related and spouse donors should be used whenever possible. By not doing so, many family members are denied the opportunity to improve the quality of life for their next of kin, and scarce health care resources are not optimally utilized.

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