Evaluation of Prospective Donors and Recipients

**FIGURE 12-32**
Preliminary evaluation of a living prospective donor. The prospective donor must be made aware of the possible costs associated with donation, including travel to and from the transplantation center and time away from work. The prospective donor must undergo a psychological evaluation to ensure the donation is voluntary. A preliminary medical evaluation should assess the risks of transmitting infectious diseases with the kidney, e.g., infection with human immunodeficiency virus (HIV) and cytomegalovirus (CMV). (From Kasiske and coworkers [2]; with permission.)

**FIGURE 12-33**
Assessing risks. Older age may place the living prospective donor at greater surgical risk and may be associated with reduced graft survival for the recipient. The prospective donor must be informed of both the short-term surgical risks (very low in the absence of cardiovascular disease and other risk factors) and the long-term consequences of having only one kidney. With regard to long-term risks, it should be considered whether there is a familial disease that the living donor may be at risk to acquire and whether having only one kidney would alter the natural history of renal disease progression. These questions are often most pertinent for relatives of patients with diabetes. (From Kasiske and coworkers [2]; with permission.)

**FIGURE 12-34**
Donor age restrictions used by transplantation centers. Results of an American Society of Transplantation survey of the United Network for Organ Sharing centers showed that many centers either use no specific age exclusion criteria or have no policy. Among those that use an upper age limit, there appears to be a bell-shaped curve, with 65 years of age at the median. (From Bia and coworkers [11]; with permission.)
Screening living prospective donors for diabetes. Results of the survey of the United Network for Organ Sharing centers showed that most centers exclude patients with a mildly elevated fasting blood sugar (FBS) and patients with normal FBS but an abnormal glucose tolerance test (GTT). Most centers exclude donors with mild type II diabetes. (From Bia and coworkers [11]; with permission.)

Long-term risks of kidney donation. In a meta-analysis combining 48 studies of the long-term effects of reduced renal mass in humans, no evidence was found of a progressive decline in renal function after a 50% reduction in renal mass. Indeed, a small but statistically significant increase occurred over time in the glomerular filtration rate. A small increase in urine protein excretion occurred; however, the rate of increase per decade was less than that generally considered an abnormal amount of protein excretion, eg, 150 mg/d. A small increase in systolic blood pressure was noted; however, it was not enough to lead to an increase in the incidence of hypertension. Thus, it appears that the long-term risks of kidney donation are very small. Shown are multiple linear regression coefficients and 95% confidence intervals. Failure of the confidence interval to include zero indicates \( P < 0.05 \). (From Kasiske and coworkers [12]; with permission.)

Blood pressure (BP) criteria for excluding living prospective donors. Results of the survey of the United Network for Organ Sharing centers showed that most exclude prospective donors who require antihypertensive medication or whose BP is persistently elevated over 130/80 mm Hg. However, most centers do not exclude living prospective donors who occasionally have BP readings over 130/80 mm Hg or patients with so-called white coat hypertension. (From Bia and coworkers [11]; with permission.)
Proteinuria, hypertension, or kidney stones in living prospective donors. Prospective donors with pyuria must be evaluated for possible infection and other reversible abnormalities. Proteinuria is generally a contraindication to donation. Hypertension also must be considered at least a relative contraindication to donation. Patients with a history of nephrolithiasis but no current or recent stones may be considered for donation after first undergoing urologic and metabolic evaluations for stones. (From Kasiske and coworkers [2]; with permission.)

Final steps in evaluating a living prospective donor. Renal artery angiography is performed to define the anatomy of the renal artery system and exclude other previously undetected abnormalities. Recent studies have shown that spiral computerized tomography can replace angiography without loss of sensitivity or specificity and with less risk and inconvenience to the prospective donor. (From Kasiske and coworkers [2]; with permission.)
Use of Marginal Cadaveric Donor Kidneys

Donor age. When there are no suitable living donors, recipients are placed on the cadaveric waiting list. The transplantation center must always decide whether a particular cadaveric kidney being offered for transplantation is suitable for the individual recipient. The shortage of organs and long waiting times have caused many centers to accept kidneys from older donors and kidneys that may be damaged. Data from the United Network for Organ Sharing clearly demonstrate the decreased graft survival rates of kidneys from older donors. As a compromise, some advocate using kidneys from older donors for older recipients. In any case, so-called marginal kidneys should be offered to recipients with appropriate informed consent. (From Cecka [3]; with permission.)

References