

Excellent Survival Using Kidney Transplants From Older Donors

Using older donors may expand the donor-organ pool for kidney transplantation.

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The long-term survival of single or dual kidney grafts from donors who are aged >60 years can be excellent, provided the grafts are evaluated histologically before implantation.¹

In general, the long-term survival of kidney grafts from older donors is inferior to that of grafts from younger donors. We sought to determine, however, whether selecting older donor kidneys according to their histologic characteristics might help positively influence long-term outcomes as well as increase the donor-organ pool.

With cooperation from the investigators at the Mario Negri Institute for Pharmacological Research, Bergamo, the Transplant Centers of Bergamo, Genoa and Padua, and the Nord Italia Transplant, we addressed this idea in a prospective cohort study. We compared the outcomes among 62 patients who received one or two histologically evaluated kidneys from donors who were aged >60 years with those of 248 matched recipients. The matched recipients had single kidney grafts

that had not been histologically evaluated and were either from donors aged ≤ 60 years or from those aged >60 years.

GRAFTS COMPARED

We considered the 124 patients who received grafts from donors aged ≤ 60 years positive-reference recipi-

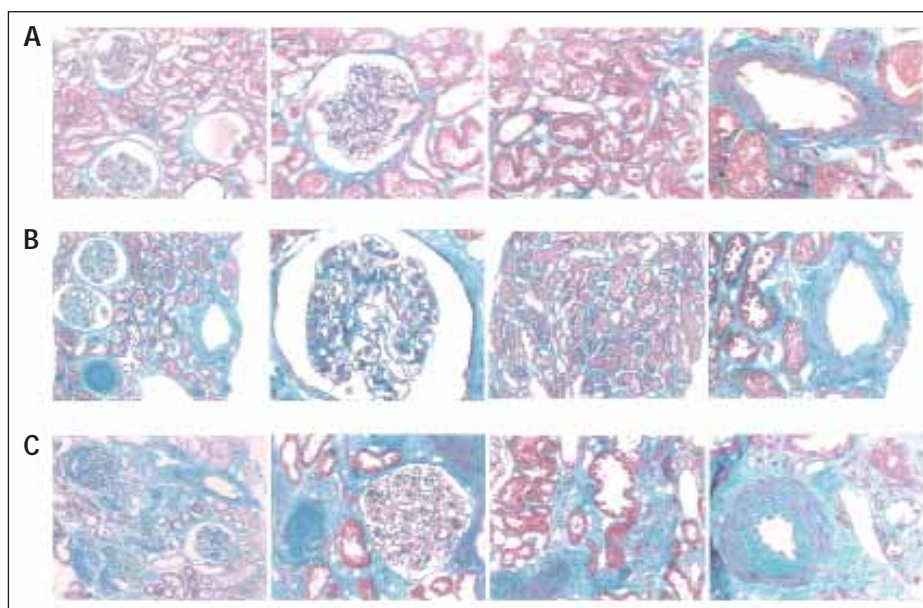


Figure 1. Representative light micrographs of kidney sections illustrating the histologic scoring criteria. Panel A shows three sections of a kidney from a 65-year-old male donor of a single transplant (global score 2). Panel B shows three sections of a kidney from a 64-year-old male donor of a dual transplant (score 5). Panel C shows three sections of a discarded kidney from a 65-year-old man (global score >7). In each panel, the left section mainly shows glomerular changes, the middle section tubular interstitial changes and the right section vascular changes.

ents who, based on available data, were expected to have an optimal outcome. The other 124 patients were negative-reference recipients because they were expected to have a worse outcome.

HISTOLOGICAL EVALUATION

The primary endpoint we used for evaluation was graft survival, and all of the recipients were aged >50 years.

We used a histological evaluation scoring system that assigned grafts a global rating of 0 through 12 for changes in glomeruli, vessels, tubules and connective tissue. Kidneys that scored 0 to 3 were used in single transplants, and those that scored 4 to 6 were used for dual

transplants. Kidneys that received a rating for 7 or worse were discarded (Figure 1).

EVALUATED GRAFT

We found that, during a median of 23 months, four recipients (6%) of histologically evaluated kidneys progressed to dialysis as compared with seven (6%) positive-reference patients and 29 (23%) negative reference recipients (Figure 2). When an evaluated graft from an older donor was used — rather than a graft that was not evaluated — the risk of failure was reduced by 3.68-fold (P=.02).

Using preimplantation histologic evaluation predicted better survival in both the whole study group and among recipients of kidneys from older donors (P=.01).

In an accompanying editorial, Drs. Francis L. Delmonico and James F. Burdick said that this Italian group reports results that are relevant to increasing the rate of successful kidney transplantation worldwide.²

There are currently 60,000 patients waiting for a kidney transplant, of those, 16,000 per year will get a kidney for the procedure. ■

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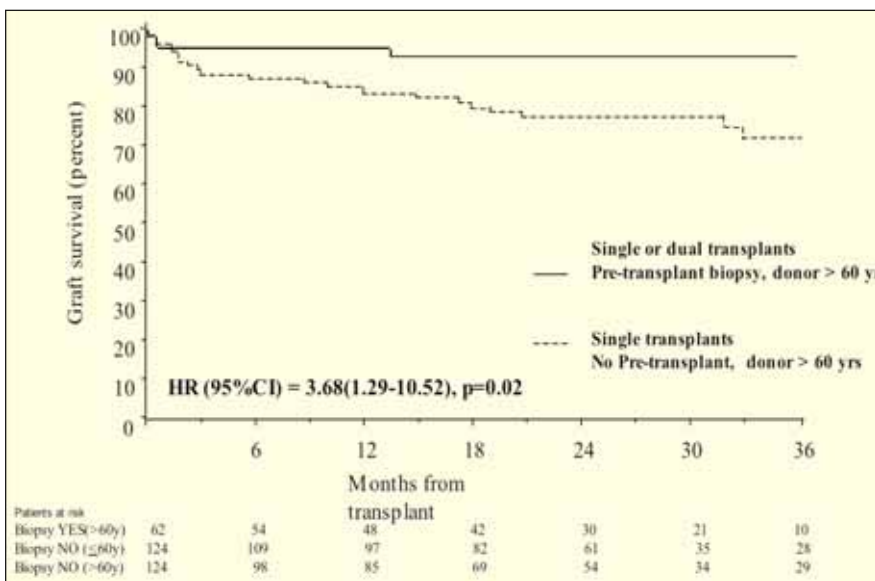
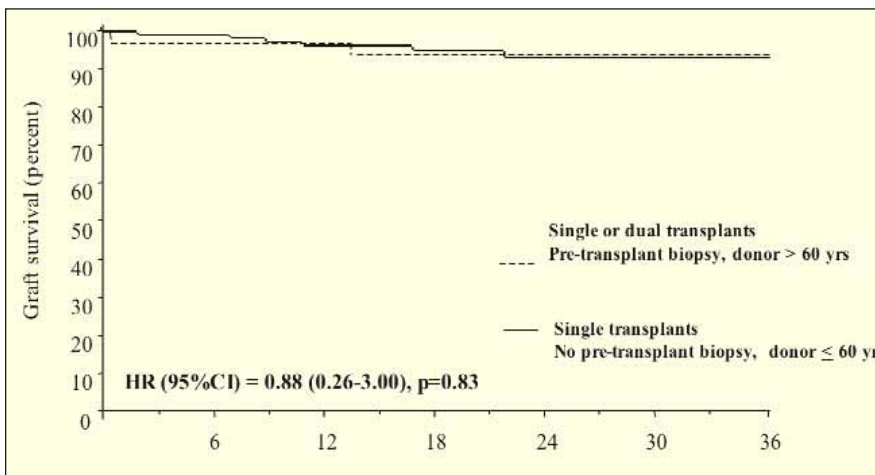


Figure 2. Graft survival of recipients of kidneys from >60-year-old donors allocated to single or dual transplant on the basis of a pretransplant histology evaluation and of recipients of single grafts from ≤60-year-old (positive-reference recipients, Panel A) or >60-year-old (negative-reference recipients, Panel B) donors allocated without pre-transplant biopsy.

1. Remuzzi G, Cravedi P, Perna A, et al. for the Dual Kidney Transplant Group. Long-term outcomes of renal transplantation from older donors. *N Engl J Med.* 2006;354:343-352.
 2. Delmonico FL, Burdick JF. Maximizing the success of transplantation with kidneys from older donors. *N Engl J Med.* 2006;354:411-413.