

Hypertension in the living donor

Author: T. Pesavento, MD

Editor: J. Tan, MD

ISSUE

Should those with pre-existing hypertension be allowed to donate a kidney?

DATA

Until recently, donors with pre-existing hypertension were traditionally excluded from donation. The Amsterdam Forum (4) consensus guidelines in 2004 stated that some patients (age >50, GFR >80 and with low urine albumin excretion of <30 mg/d) with easily controlled hypertension could represent a low-risk group for the development of kidney disease and could be considered as donors.

Data regarding long-term renal outcomes in donors with pre-existing hypertension is limited. A large meta-analysis demonstrated that donors have an increased systolic BP of 5 mmHg after 5-10 years from donation (5). No effects of arterial blood pressure on kidney function, such as GFR or urinary microalbumin, were found in studies on donors with pre-existing hypertension up to 1 year (6) and 2 years (7) from donation. However, the populations in these studies were predominantly Caucasian, and there is legitimate concern that blacks and Hispanics may have higher risks of hypertension-associated kidney disease after donation. A calculator for lifetime ESRD risk has been developed which identified pre-existing hypertension as a risk factor in the general population (8). This tool can be used to assess individual candidates risk of ESRD.

RECOMMENDATION

1. Preexisting hypertension that is well controlled as per the Amsterdam guidelines should not preclude donation in reliable Caucasian living donors who agree to long-term follow-up.

2. Due to possible genetic predispositions to ESRD and higher rates of ESRD in African American living donors, use of hypertensive donors from this group, especially if they are young, is generally discouraged.
3. Medical evaluation of those suspected to be hypertensive should include ambulatory blood pressure monitoring (ABPM) and studies to assure no end-organ damage from hypertension, such as retinal findings or left ventricular hypertrophy.

REFERENCES

1. Ibrahim HN, Foley R, Tan L, et al. Long-term consequences of kidney donation. *N Engl J Med.* 2009; 360: 459-69.
2. Mjoen G, Hallan S, Hartmann A, Foss A, Midtvedt K, Oyen O, et al. Long-term risks for kidney donors. *Kidney international.* 2014 Jul;86(1):162-7. PubMed PMID: [24284516](#)
3. Muzaale AD, Massie AB, Wang MC, Montgomery RA, McBride MA, Wainright JL, et al. Risk of end-stage renal disease following live kidney donation. *JAMA : the journal of the American Medical Association.* 2014 Feb 12;311(6):579-86. PubMed PMID: [24519297](#).
4. Delmonico F. A report of the Amsterdam Forum on the care of the live kidney donor: data and medical guidelines. *Transplantation* 2005; 79: S53
5. Boudville N, Prasad GV, Knoll G, et al. Donor Nephrectomy Outcomes Research (DONOR) Network. Meta-analysis: Risk for hypertension in living kidney donors. *Ann Intern Med.* 2006; 145: 185-96.
6. Textor SC, Taler SJ, Driscoll N, et al. Blood pressure and renal function after kidney donation from hypertensive living kidney donors. *Transplantation* 2004; 78: 276-282
7. Sofue T, Unui M, Hara T, et al. Short-term prognosis of living-donor kidney transplantation from hypertensive donors with high-normal albuminuria. *Transplantation* 2015; 97: 104-110
8. <http://www.transplantmodels.com/esrdrisk/>

Note: The recommendations in these chapters are the opinions of the Living Donor Community of Practice of AST. They are not meant to be prescriptive and opinions by other groups or institutions may be equally valid.