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No difference in follow-up estimated glomerular filtration rate between living kidney donors previously receiving antihypertensive drugs and matched controls

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Objectives:

According to current guidelines, donor candidates with controlled hypertension using 1 or 2 antihypertensive drugs may be considered as donor. However, this recommendation is based on the study that antihypertensive drug was initiated in mainly "after donor registration" and this may be white-coat hypertension because of donation-related anxiety, therefore "using antihypertensive drugs" might be misinterpreted as if it includes the kidney donors using "previously" (before donor registration). We compared the follow-up estimated glomerular filtration rate (eGFR) between living kidney donors previously receiving antihypertensive drugs and matched controls.

Methods: This single-center retrospective study classified 97 living kidney donors previously receiving antihypertensive drugs into two groups; 1 drug group (61 donors) and 2 drugs group (36 donors). We compared follow-up eGFR between each donor previously receiving antihypertensive drugs and 1:3 age-, sex-, and follow-up duration matched controls who did not receive antihypertensive drugs previously.

Results: There was no significant difference in follow-up GFR between donors previously taking antihypertensive drugs and matched controls in each group and in total donors. Among the total donors, there was no significant difference in the number of donors with $eGFR \leq 45 \text{ mL/min/1.73m}^2$. Multiple linear regression analysis showed that baseline eGFR was the only independent risk factor for the final follow-up eGFR in the total donors.

Conclusions: Our result supports the current guidelines that donor candidates with controlled hypertension using 1 or 2 antihypertensive drugs may be considered as donors, and may increase the strength of this recommendation.

Comparison of pre-donation clinical characteristics between donors previously taking antihypertensive drugs and matched controls

Table 1. Comparison of pre-donation clinical characteristics between donors previously taking antihypertensive drugs and matched controls

	Control (n= 183)	1 drug (n= 61)	<i>P</i> value	Control (n= 108)	2 drugs (n=36)	<i>P</i> value
Age (years) ^a	50.0±8.3	50.3±8.57	0.805	60.0±6.7	56.0±6.8	0.989
Male gender	108(59.0%)	36(59.0%)	1.000	57(52.8%)	19(52.8%)	1.000
Smoking	43(23.5%)	16(26.2%)	0.666	27(25.0%)	8(22.2%)	0.736
BMI (kg/m ²)	24.5±3.6	26.4±3.4	<0.01	24.6±2.4	26.1±3.1	0.014
SBP (mmHg)	123±15	139±21	<0.01	125±16	127±16	0.567
DBP (mmHg)	78±11	87±12	<0.01	84±50	80±9	0.657
HbA1c (%)	6.4±8.5	5.8±0.6	0.661	5.6±0.3	5.7±0.3	0.277
MDRD-eGFR	98.9±17.2	98.9±17.6	0.993	99.9±14.9	100.0±15.0	0.985
GFR using ^{99m} Tc-DTPA	96.1±17.0	102.0±18.5	0.061	93.3±20.8	86.9±17.9	0.190
LVH on EKG	15(8.2%)	8(13.1%)	0.255	6(5.6%)	5(13.9%)	0.145
LVH on Echocardiography	4(4.2%)	7(15.9%)	0.036	1(1.8%)	3(9.1%)	0.138

^aMean±SD

Comparison of outcome between donors previously taking antihypertensive drugs and matched controls at the time of final follow-up

Table 2. Comparison of outcome between donors previously taking antihypertensive drugs and matched controls at the time of final follow-up

	Control (n= 183)	1 drug (n= 61)	<i>P</i> value	Control (n= 108)	2 drugs (n=36)	<i>P</i> value
Follow up (months) ^a	54(12~263)	51(12~214)	0.70	51(12~226)	54(12~175)	0.776
SBP (mmHg)	123±15	130±13	0.006	126±13	130±17	0.567
DBP (mmHg)	74±10	78±9	0.014	74±11	79±12	0.038
Antihypertensive drug	3(1.6%)	61(100%)	<0.001	0(0.0%)	100(100%)	<0.001
MDRD-eGFR	70.6±14.6	73.5±13.6	0.172	71.2±11.4	69.9±21.1	0.650
MDRD-eGFR (% change)	27.9±13.1	24.9±11.3	0.101	28.1±11.5	30.0±18.1	0.546
MDRD-eGFR<45ml/min	5(2.7%)	0(0.0%)	0.335	0(0.0%)	2(5.6%)	0.014
Morbidity after donation						
CAD	1(0.5%)	3(4.9%)	0.049	0(0.0%)	0(0.0%)	
CVA	0(0.0%)	0(0.0%)		1(0.9%)	0(0.0%)	1.000
CHF	0(0.0%)	1(1.6%)	0.250	0(0.0%)	0(0.0%)	

^aMedian (range)