

FACTORS ASSOCIATED WITH INFRA-COMPENSATION OF THE REMAINING KIDNEY AFTER TOTAL NEPHRECTOMY AFTER DONATION

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INTRODUCTION

- It remains uncertain which creatinine-based equation yields the most accurate estimation of Glomerular Filtration Rate (GFR) when evaluating individuals as potential kidney donors.
- Factors associated with infra-compensation of the remaining kidney after total nephrectomy are not well established.

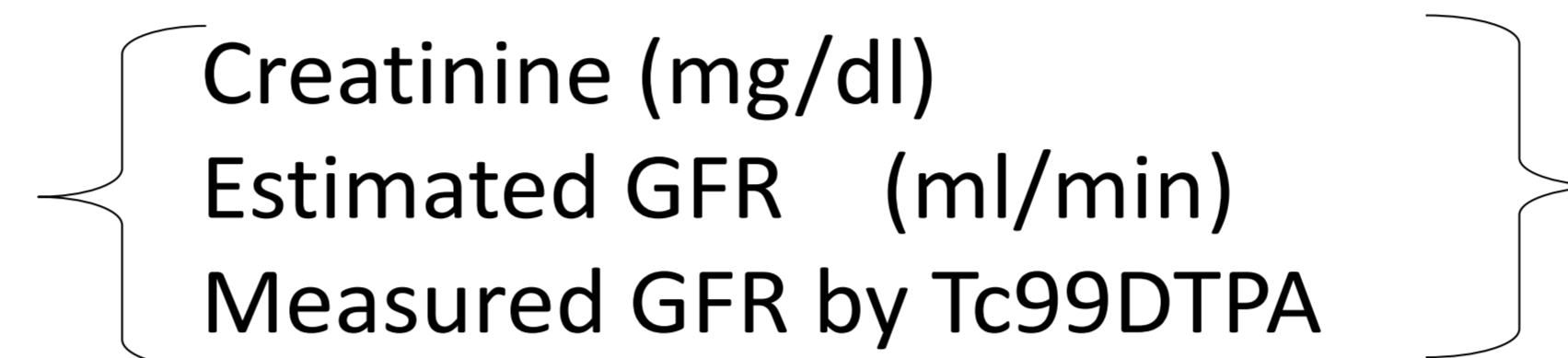
OBJECTIVES

- We aim to study the correlation between renal function estimation equations and measure methods for assessing renal function.
- We evaluated the association between donors and recipients GFR one year after donation.
- We aim to assess the factors associated to the infra-compensation of renal function by the remaining kidney in individuals who undergo nephrectomy for renal donation.

MATERIALS AND METHODS

- Observational retrospective study**
- 64 kidney donors who underwent nephrectomy at Hospital del Mar, between January/2001 and July /2015**

- We assessed:
 - Demographic and anthropometric data
 - Blood testing



- We analyzed the relationship between basal values of GFR measured by Tc-⁹⁹m-DTPA (diethylene-triamine-pentaacetate) and those estimated by Modification Diet Renal Disease (MDRD4) and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI)

RESULTS

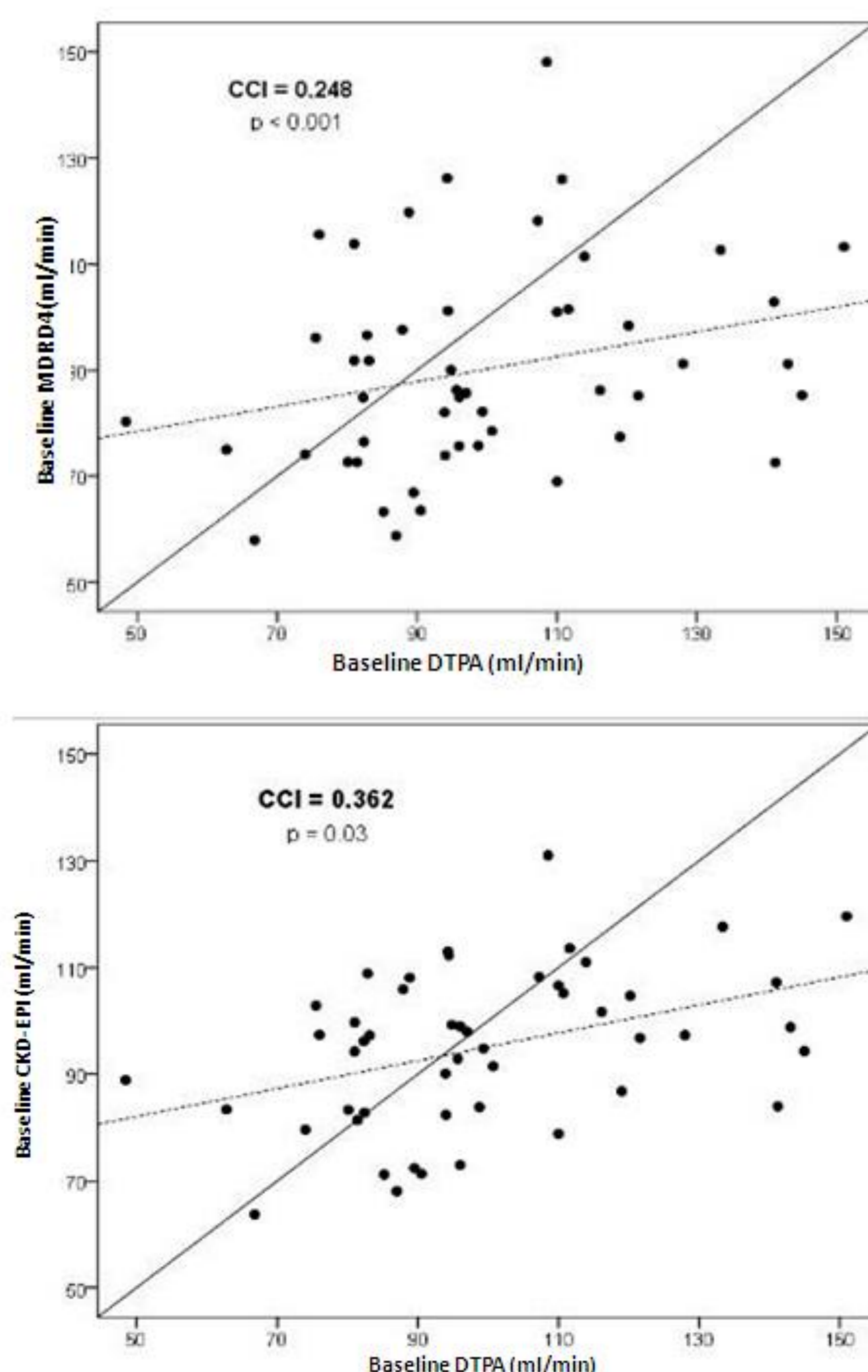
N=64

Age at donation (mean ± SD)	48.3 ± 11 years
Gender, women(%)	70.6%
BMI	26.4±3.8

	Baseline	1 year after donation	p
Creatinine (mean ± SD, mg/dl)	0.8±0.15	1.1 ± 0.2	<0.001
Estimated GFR by MDRD4 (mean ± SD, mL/min/1.73m ²)	88.3±20,1	59.5 ± 11.5	<0.001
Estimated GFR CKD-EPI (mean ± SD, mL/min/1.73m ²)	93.5 ± 16	66 ± 14.1	
Mean compensation after donation	69±15%		

Correlation between estimation equations and measured GFR

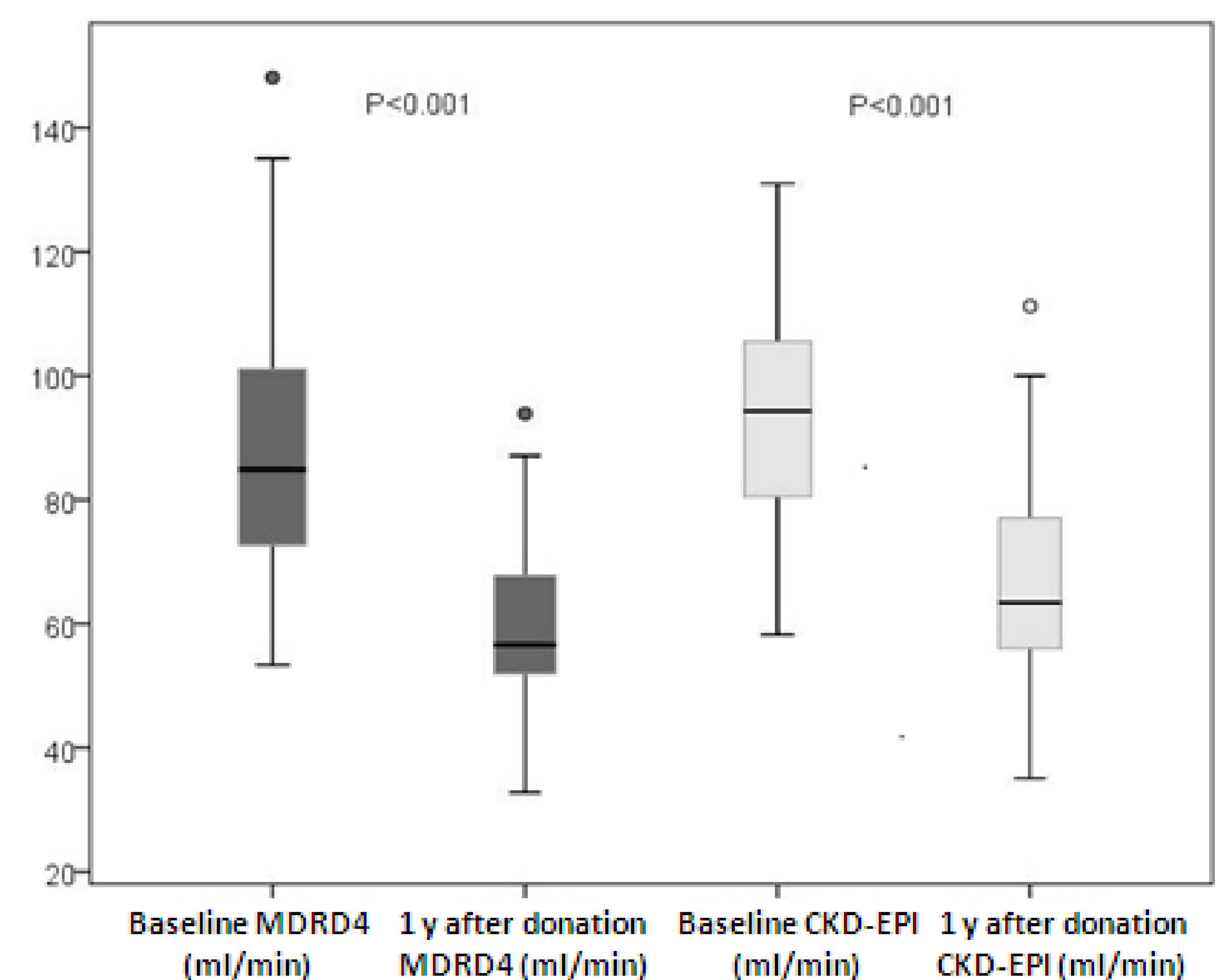
The correlation between estimation equations and the measure method was superior for CKD-EPI (CCI =0.362, p<0.05) than for MDRD4 (ICC=0.248, p<0.001).



Factors associated to the infra-compensation of renal function by the remaining kidney

	Univariate analysis			Multivariate analysis	
	GFR 12m<70% (N= 38)	GFR 12m>70% (N=22)	p	OR (CI 95%)	p
Donor age (mean ±SD)	49.3 (11.36)	47.8 (10.1)	0.58		
Gender, female (n,%)	24 (63%)	19 (86%)	0.05	0.4 (0.09-1.7)	0.24
Race (Caucasic)	32(84%)	19(86%)	0.46		
BMI (mean ±SD)	26,09 (2.8)	27.31 (4.8)	0.22		
HTA (No)	37(97%)	19(86%)	0.1		
Obesity (No)	7(18%)	1(4%)	0.1		
Baseline creatinine, mg/dl (mean ±SD)	0.76 (0.14)	0.83 (0.15)	0.1		
MDRD4 Baseline GFR, ml/min (mean ±SD)	93.73 (19.6)	78.1 (15.34)	0.001	0.95 (0.91-0.99)	0.01
CKD-EPI Baseline GFR, ml/min (mean ±SD)	97.7(14.7)	86.1(15.17)	0.005		
FGmTc-99m-DTPA basal, ml/min(mean ±SD)	100.4 (24.1)	97.45 (19.96)	0.68		

Variation in renal function one year after donation



CONCLUSIONS

- In our experience FGm-Tc99m-DTPA correlates better with the estimation of GFR with CKD-EPI equation than with MDRD4 equation when assessing renal function for donor screening purposes.
- A high baseline eGFR predicts limited compensation. A relatively low baseline eGFR is associated with a higher percentage of contralateral kidney function increase.

