CONCORDANCE OF THE ESTIMATED GLOMERULAR FILTRATION RATE BETWEEN COCKCROFT-GAULT, MDRD AND CKD-EPI IN RENAL TRANSPLANT PATIENTS.

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AIM:

Analyze the concordance of the MDRD and CKD-EPI equations to determine the GFR, using the Cockcroft-Gault (CG) formula as a reference.

MATERIALS AND METHODS:

- Observational, cross-sectional study.
- Patients who received a single renal transplant between 2007-2009 and who were clinically stable 12 months post-transplant.
- GFR was calculated with these methods:

1. **CG**= (((140-age) x weight)/72 x serum creatinine) x (0.85 if female).
2. **MDRD**=186 x (serum creatinine)$^{-1.154}$ x (age)$^{-0,203}$ x (0.742 if female) x (1.212 if black race).
3. **CKD-EPI**:

- If serum creatinine ≤0.7 and female, CKD-EPI=141 x (serum creatinine/0.7)$^{-0,329}$ x (0.993)^{age} x (1.018) x (1.159 if black race)
- If serum creatinine >0.7 and female, CKD-EPI=141 x (serum creatinine/0.7)$^{-1,209}$ x (0.993)^{age} x (1.018) x (1.159 if black race)
- If serum creatinine≤0.9 and male, CKD-EPI=141 x (serum creatinine/0.9)$^{-0,411}$ x (0.993)^{age} x (1.159 if black race)
- If serum creatinine>0.9 and male, CKD-EPI=141 x (serum creatinine/0.9)$^{-1,209}$ x (0.993)^{age} x (1.159 if black race)

Statistical Analysis:

- Descriptive analysis.
- Correlatión (Pearson coefficient).
- Concordance study(Bias, variability and exactness).

Cockcroft-Gault	MDRD4	CKD-EPI	P values
Difference (Bias) (ml/min/1.73 m^2)	-10.6±12.7	-9.8±11.3	**0.006**
Variability (%)	14.5±15.7	13.6±14.5	**0.031**
P30% (global)	81.7%	86.9%	**<0.001**
- >60 ml/min/1.73 m^2	75.3%	83.5%	**<0.001**
- ≤60 ml/min/1.73 m^2	89.7%	91.2%	**<0.001**

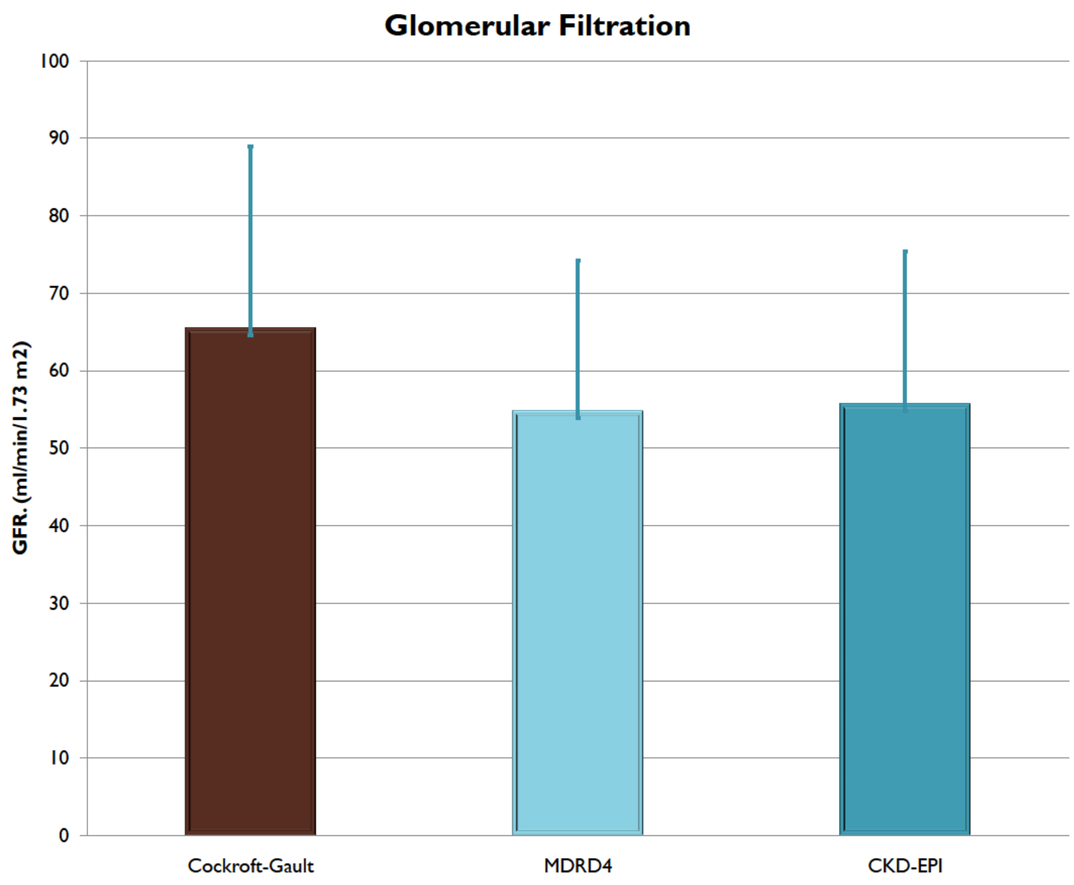
*Bias was defined as the normal difference shown by the trend of each method to under-estimate or over-estimate the CG value. The variability was defined as the absolute difference expressed as a percentage of the arithmetic mean between the reference method (CG) and the method used. The exactness was expressed as the percentage of measurements falling within 30% above or below the value obtained with the reference method.

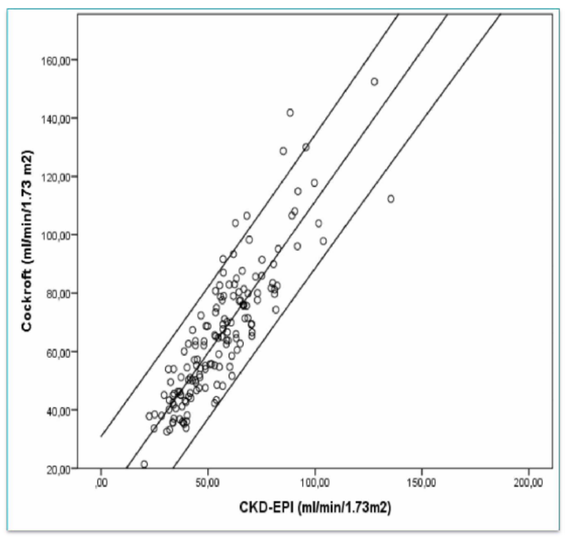
Conclusions:

In our study population, there are no clinically relevant differences between using the CKD-EPI or the MDRD equations, though the CKD-EPI equation gives results that are closer to those of the CG method. This was more evident when the patients had a GFR >60 ml/min/1.73 m^2.

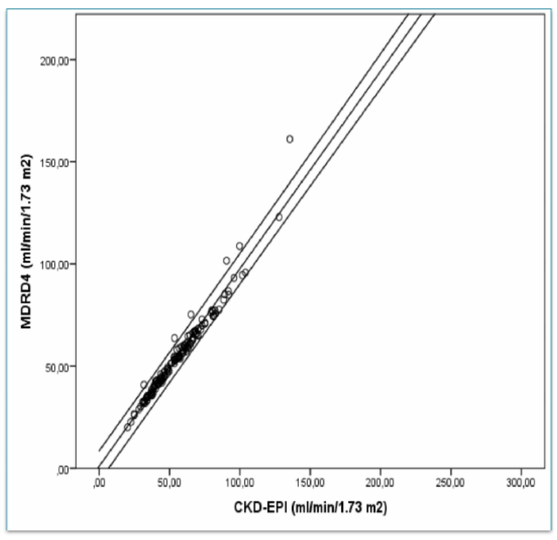
RESULTS :

N=153





r=0.87; p<0.001



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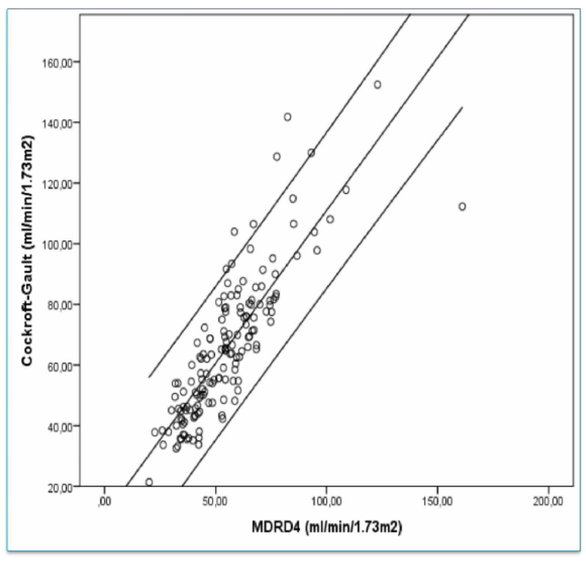

r=0.84; p<0.001

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