Comments on the comparison and agreement of equations to estimate glomerular filtration rate in diagnosis of occult chronic kidney disease

Nefrología 2008; 28 **(5)** 561

To the editor: From the greatest respect to the study conducted by Buitrago et al[1] comparing the agreement between different equations to estimate glomerular filtration rate (GFR), we would like to make some comments:

1. Buitrago et al conclude that the MDRD equation would exclude from diagnosis of chronic kidney disease (CKD) a group of people with a high cardiovascular risk who would be diagnosed using the Cockcroft-Gault (CG) equation, and that follow-up of such people found a similar proportion of coronary and cardiovascular events as in the group of patients with CKD according to the MDRD equation. This result agrees with recommendations of European guidelines for management of arterial hypertension,[2] which consider renal subclinical lesion the presence of a decreased GFR both by the MDRD and CG equations.

2. If the number of patients with occult CKD detected by each of the two equations in the study is analyzed, both the CG and MDRD equations would detect 50 of 118 patients (42.4%). The remaining patients would be diagnosed based on one of the equations used. Thus, 70 of the 118 patients (59.3%) would be detected by the CG equation, and 98 patients (83.1%) would be detected by the MDRD equation The MDRD equation detects almost 25% more patients who experienced 17% of coronary events and 22% of cardiovascular events in a 10-year follow-up period. The MDRD equation may be considered more effective for detecting the population at risk in such group.

3. Moreover, the MDRD equation may be automatically implemented in the operating system of laboratories with no additional cost, whereas each calculation of the CG equation requires manual entry of the patient weight, as well as height if we want to subsequently correct it for body surface area, as was done in the above study. This makes the MDRD equation more efficient.

4. In the study, reporting test data from patients collected between 1990 and 1994, no reference is made to whether serum creatinine levels measured in mg/dL were rounded to one or two decimals. This has a special relevance when studies on the prevalence of CKD are performed. Our group recently reported[3] that when a single decimal was used in our population for establishing diagnosis of CKD, prevalence increased 9%, while diagnosis of occult CKD decreased 26%. This decrease was much greater in males as compared to females.

Thus, and in agreement with the consensus document from the Spanish Society of Nephrology and the Society of Clinical Chemistry,[4] we think that the MDRD equation is more effective and efficient than the CG equation, and its use should be implemented in laboratory reports.

1. Buitrago J, Calvo JI, Gómez-Jiménez C, Cañón L, Robles NR, Angulo E. Comparación y concordancia de las ecuaciones de estimación de filtrado glomerular de Cockcroft-Gault y MDRD en el diagnóstico de enfermedad renal crónica oculta. *Nefrología* 2008; 28: 301-310.
2. Mancia G, De Backer G, Dominiczak A, Cifkova R, Fagard R, Germano G, Grassi G, Heagerty AV, Kjeldsen SE, Laurent S, Narkiewicz K, Ruilope LM, Rynkiewicz A, Schmieder RE, Struijker HAJ, Zanchetti A. 2007 Guidelines for the management of arterial hypertension: The task force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Journal of Hypertension* 2007; 25: 1105-1187.
3. Labrador PJ, Jiménez M, Mengotti T, Labrador J. Enfermedad renal oculta. Una cuestión de decimales. *Nefrología* 2008; 28: 228-229.
4. Gracia S, Montañés R, Bover J, Cases A, Deulofeu R, De Francisco ALM, Orte LM. Documento de consenso: recomendaciones sobre la utilización de ecuaciones para la estimación del filtrado glomerular en adultos. *Nefrología* 2006: 26: 658-665.

P. J. Labrador Gómez, P. González Castillo, T. Mengotti Fernández de los Ríos and M. Jiménez Álvaro
Unidad de Nefrología. Hospital Virgen del Puerto. Plasencia. Cáceres.
Correspondence: *Pedro Jesús Labrador Gómez. pjlabrador@yahoo.es. Hospital Virgen del Puerto. Paraje de Valcorchero, s/n. 10600 Plasencia (Cáceres). España.*

Kidney transplant from a living donor provides the same results as kidney transplant from a cadaveric donor

Nefrología 2008; 28 **(5)** 561-562

To the editor: The editorial comment[1] on the Guirado et al article[2] states that kidney transplant from living donors has obvious advantages over kidney transplant from cadaveric donors. In addition, given the relative scarcity of cadaveric donors, it is suggested that it would be convenient to increase the number of kidney transplants from living donors It is argued that the limited number of transplants from living donors is due to ignorance of this procedure by professionals and patient relatives, and that the fact that this possibility is not offered by physicians or not suggested by patients and relatives «reflects in a more or less obvious way the fear of nephrectomy in healthy people».

However, the article[2] explains that the better results achieved with kidney transplant from living donors stem from the statistical approach of the study, rather than the intrinsic kidney characteristics. Differences in patient and graft survival in univariate studies disappear when studies with a greater statistical power, multivariate, or with a control group of selected patients are

conducted.[3] That is, the assumed advantages inherent to living donors, such as shorter cold ischemia time, preemptive immunosuppression, absence of the consequences of donor's cerebral death, etc. do not appear to provide for better results with this type of donor.

By contrast, the influence of other factors, such as age, sex, body surface area, and HLA system compatibility between donor and receptor and waiting time on dialysis on transplant outcome is known. A shorter time on dialysis is the only advantage that use of a living instead of a cadaveric donor for transplant may offer. It should therefore be considered that acceptance of a living donor to obtain the beneficial effect of shortening the time on replacement therapy may be counteracted by the presence of incompatibilities in the other factors.

On the other hand, increases in the number of cadaveric donors are made possible by reduction of family refusals and promotion of extraction in non-beating heart donors. The excellent activity of Hospital Clínico in Madrid in this field should be extended to other extracting hospitals.[4]

With regard to the potential iatrogenics of kidney removal in donors, while no conclusive studies are available, most authors advise against use of non-optimal donors because of the potential long-term implications.[5]

In conclusion, I think that an indiscriminate increase in kidney transplants from living donors with the single purpose of increasing the number of transplants should not be considered. Each potential transplant pair should be studied to decide whether or not transplant is recommended, and mid-term studies should be started on the potential implications of donor nephrectomy.

1. Domínguez-Gil B, Pascual J. El trasplante renal de donante vivo en España: una gran oportunidad. *Nefrología* 2008; 28: 143-7.
2. Guirado L, Vela E, Clèries M, Díaz JM, Facundo C, García-Maset R, Registro de enfermos renales de Cataluña. ¿Por qué el trasplante renal de donante vivo da mejores resultados que el trasplante renal de donante cadáver? *Nefrología* 2008; 28: 159-67.
3. Solà R, Vela E, Cleries M, Guirado Ll, Diaz JM, Facundo C, Deulofeu R. Living donor kidney transplantation in Catalonia: comparison with cadaveric kidney donors. *Transplant Proc* 2007; 39: 2208-9.
4. Sánchez-Fructuoso AI, De Miguel Marqués M, Prats D, Barrientos A. Non-heart-beating donors: experience from the Hospital Clinico of Madrid. *J Nephrol* 2003; 16: 387-92.
5. Boudville N, Prasad R, Knoll G, Muirhead N, Thiessen-Philbrook H, Yang RC, Rosas-Arellano P, Housawi A, Garg AX. Meta-analysis: risk for hypertension in living kidney donors. *Ann Intern Med* 2006; 145: 185-96.

R. Solà Puigjaner
Fundació Puigvert
Correspondence: *Ricard Solà Puigjaner. rsola@fundacio-puigvert.es. Fundació Puigvert. C/ Cartagena, 340. 08025 Barcelona. España.*

Renal function recovery on hemodialysis

Nefrología 2008; 28 **(5)** 562-563

To the editor: Advanced renal insufficiency requiring hemodialysis other than acute tubular necrosis may be totally or partially reversed in certain diseases.[1] More effective and aggressive treatment may be able to improve prognosis of conditions such as autoimmune,[2-4] tumoral,[5,6] and even cardiovascular diseases.[7,8] Some of these conditions were doubtfully amenable to renal replacement therapy until recently. In this group of new diseases admitted for hemodialysis, relative recovery of renal function may be seen without this involving discontinuation of such treatment in all cases. Our experience is briefly summarized below.

The first case reported is a 56-year-old male recently diagnosed of IgA multiple myeloma with plasma cell infiltration of 27%. He was referred to us with laboratory data suggesting advanced renal insufficiency (ClCr 7 mL/min, Cr 8.3 mg/mL) and no apparent signs of hemodynamic decompensation, hypercalcemia, or nephrotoxics. `Dialysis and simultaneous specific treatment for his underlying disease were immediately started. Three months after the first dialysis session, the patient has serum Cr levels of 2.36 mg/dL.

The second case was a 16-year-old female who attended the emergency room for a general syndrome of fatigue and anorexia, and reported a pharyngeal process in the previous days. Serum Cr levels were 10 mg/dL, and dialysis was therefore started. Laboratory tests suggested glomerulonephitis, and renal biopsy confirmed the presence of endocapillary and extracapillary proliferation with 50% of cell crescents. Corticosteroid and cyclophosphamide were administered as a bolus. Serum Cr levels of 1.4 mg/dL were found at 15 days.

The third case was an 83-year-old male patient admitted for fatigue who was found advanced uremia (Cr 5.8 mg/dL) and clinical and biological evidence of rapidly progressive glomerulonephritis. No renal biopsy was performed because of the patient age and poor cooperation. He was treated with corticosteroid and cyclophosphamide boluses. After 6 months on hemodialysis, serum creatinine value was 3.5 mg/dL, and session time was shortened.

A fourth, more complex case was that of a 64-year-old male patient with a history of alcohol-induced cirrhosis and moderate renal insufficiency who was admitted in a state of overshoot uremia. He underwent regular hemodialysis and recovered a certain renal function, but total withdrawal from replacement therapy was not considered appropriate because of his initial severe status and the great improvement in his quality of life.

Finally, regular hemodialysis for refractory heart failure was started in a 67-year-old male patient with Cr levels of 6 mg/dL. He had been diagnosed dilated cardiomyopathy based on echocardiographic data. Since hemodialysis

Table I.

Dx	Cr 1	Interv (days)	Cr 2	Age	HD disc.	Morb.
MM	8.3	días	2.65	58	Yes	0
AgGN	11	15	1.4	16	Yes	0
RPGN	5.8	120	3.3	82	No	0
Cirrhosis	8	90	3.6	67	No	0
CRS	6.5	73	3.8	70	No	0

Dx: Diagnosis. Cr 1: Baseline Cr. Interv (days between Cr 1 and Cr 2). Cr 2: Control creatinine. MM: Multiple myeloma. CRS: Cardiorenal syndrome. HD disc.: Exit from program. Morb.: Morbidity in admission days.