Importance of Early Identification of Renal Disease

To the Editor,

We read with interest the study by Cases Amenós et al about the prevalence of chronic renal failure (CRF) in patients with or at a high risk of cardiovascular disease. The authors used the data from the MULTIRISC study[1] to carry out an epidemiological, cross-sectional multicenter study in outpatient clinics belonging to cardiology, internal medicine and endocrinology departments. The patients were older than 18 years of age and with a high cardiovascular risk (SCORE [Systematic Coronary Risk Evaluation] >5% or diabetes mellitus or concomitant clinical disease). CRF was defined as an estimated glomerular filtration rate (MDRD [Modification of Diet in Renal Disease formula]) <60 mL/min/1.73 m^2; established CRF was defined if, in addition, the serum creatinine was ≥1.3 mg/dL in men or ≥1.2 mg/dL in women, and occult CRF when the creatinine figures were lower.

The study sample comprised 2608 patients, of whom 62.7% did not have CRF, 18.9% had established CRF, and 18.4% had occult CRF. As was to be expected, when the clinical profile of the patients was compared according to whether or not they had CRF, those with CRF had more risk factors and associated vascular disease.

The clinical benefit of calculating the glomerular filtration rate is unquestionable, both to diagnose CRF and to adjust the doses of certain drugs. Moreover, patients with CRF are known to have a worse clinical profile, a greater cardiovascular risk and, consequently, a worse prognosis. Likewise, it is not uncommon for this population to be under-treated and to undergo fewer diagnostic tests, which just worsens the situation even more.[2] Nevertheless, it should not be forgotten that the glomerular filtration rate is a continuous variable and a cut-off point of 60 mL/min/1.73 m^2 is still arbitrary. Is there really such a difference in prognosis according to whether a patient has a glomerular filtration rate of 61 or 59 mL/min/1.73 m^2?

A recent study involving 2024 patients with chronic ischemic heart disease and hypertension analyzed possible differences in the clinical profile and control of risk factors according to the glomerular filtration rate (≥60 vs <60 mL/min/1.73 m^2) or according to serum creatinine figures (≥1.3/1.2 in men vs <1.3/1.2 mg/dL in women) and a glomerular filtration rate <60 mL/min/1.73 m^2 vs creatinine ≥1.3/1.2 mg/dL, respectively.[3] The results of this study, as well as demonstrating that approximately one third of the patients had

CRF, also detected that the patients with CRF, independently of whether this was determined from the glomerular filtration rate or serum creatinine figures, had more risk factors, more organ damage and worse blood pressure control. However, the results also showed that the risk profile and blood pressure control did not vary according to whether the glomerular filtration rate was <60 mL/ min/1.73 m^2 or the creatinine was ≥1.3/1.2 mg/dL (men/women), which indicates that these two parameters are identifying the same group of patients. Furthermore, it should be recalled that the measurement of either the glomerular filtration rate or serum creatinine can be affected under certain circumstances, so that just one single determination at a particular moment would seem inadequate.

Consequently, in view of these findings, the first point to consider is that greater importance should be given to the early detection of CRF, however mild it may be, as we are dealing with very high risk populations.[4] Additionally, all patients with a creatinine ≥1.3/1.2 mg/dL (men/ women) should be considered as very high risk patients, since they already have CRF, though in fact many physicians fail to identify a creatinine of 1.3 mg/dL in a man as renal disease. Finally, in patients with normal creatinine figures, it should be obligatory to calculate the glomerular filtration rate, as they could have occult CRF, especially those patients who have several associated risk factors, concomitant vascular disease or poor blood pressure control.

Vivencio Barrios,[a] Carlos Escobar,[b] Rocío Echarri,[c] and Jorge Gómez Cerezo[d]

[a]Servicio de Cardiología, Hospital Ramón y Cajal, Madrid, Spain
[b]Servicio de Cardiología, Hospital Infanta Sofía, Madrid, Spain
[c]Servicio de Nefrología, Hospital Infanta Sofía, Madrid, Spain
[d]Servicio de Medicina Interna, Hospital Infanta Sofía, Madrid, Spain

REFERENCES

1. Cases Amenós A, González-Juanatey JR, Conthe Gutiérrez P, Matalí Gilarranz A, Garrido Costa C. Prevalencia de insuficiencia renal crónica en pacientes de alto riesgo o con enfermedad cardiovascular. Rev Esp Cardiol. 2010;63:225-8.
2. McClellan WM, Knight DF, Karp H, Brown WW. Early detection and treatment of renal disease in hospitalized diabetic and hypertensive patients: important differences between practice and published guidelines. Am J Kidney Dis. 1997;29:368-75.
3. Barrios V, Escobar C, Murga N, De Pablo C, Bertomeu V, Calderón A, et al. Clinical profile and management of hypertensive patients with chronic ischemic heart disease and renal dysfunction attended by cardiologists in daily clinical practice. J Hypertens. 2008;26:2230-5.
4. Levey AS, Coresh J, Balk E, Kausz AT, Levin A, Steffes MW, et al. National Kidney Foundation practice guidelines for chronic kidney disease: evaluation, classification, and stratification. Ann Intern Med. 2003;139:137-47.

Response

To the Editor,

In response to the letter of Barrios et al concerning our article published in the *Revista Española de Cardiología*,[1] we wish to make the following comments.

The glomerular filtration rate (GFR) is indeed a continuous variable, but we do not agree that the criterion of 60 mL/min/1.73 m^2 is an arbitrary value. This figure was based on criteria of morbidity and mortality employed by the American K/DOQI initiative in developing its classification of chronic kidney disease, and which was subsequently accepted internationally.

We coincide with these authors in their appreciation of the limitations of measuring creatinine, and thus of the estimated GFR (eGFR) using equations based on creatinine, as well as the need for 2 determinations, at least 3 months apart, to conclude that a patient has chronic renal failure (CRF). However, it is the simplest way to estimate the GFR, as recognized by nephrology societies as well as other scientific societies, such as the AHA.

Barrios et al cite a cross-sectional study of theirs from which they infer that creatinine is to be used if it is high and only eGFR if this is within the reference range to detect occult renal failure.

We believe this to be an excessive simplification: the risk of morbidity and mortality has been shown to increase as the GFR decreases, and the prevalence and severity of hypertension increases in parallel with the reduction in the eGFR.

The classification of chronic renal disease into different stages helps the physician to know what approach to take at any particular time. CRF is associated with various complications, such as anemia or alterations in bone and mineral metabolism, that need to be evaluated and treated.

The pharmacokinetics is altered in CRF. In the MULTIRISC study, we noted that the use of drugs that were contraindicated or unsuitable, eg, metformin or aldosterone antagonists, in patients with an eGFR <30 mL/min/1.73 m^2 was not negligible. This was partly attributed to lack of recognition of the stage by the health care professionals. Finally, early referral to the nephrologist is associated with better survival.

Thus, for all these reasons, we believe that the eGFR should be determined in all patients, not just to categorize them as patients with a high cardiovascular risk, but also to classify them correctly, delay the disease progression, treat the complications derived from the CRF, avoid iatrogenic complications and, if necessary, refer the patient to the nephrologist.

Aleix Cases-Amenós,[a] José R. González-Juanatey,[b] Pedro Conthe-García,[c] Arantxa Matalí-Gilarranz,[d] and Cristina Garrido-Costa[e]

[a]Servicio de Nefrología, Hospital Clínic, Universidad de Barcelona, Barcelona, Spain
[b]Servicio de Cardiología, Complejo Hospitalario Universitario de Santiago de Compostela, Santiago de Compostela, A Coruña, Spain
[c]Servicio de Medicina Interna, Hospital General Universitario Gregorio Marañón, Madrid, Spain
[d]Laboratorios Almirall, S.A. Barcelona, Spain
[e]ADKNOMA. Barcelona, Spain

REFERENCES

1. Cases Amenós A, González-Juanatey JR, Conthe Gutiérrez P, Matalí Gilarranz A, Garrido Costa C. Prevalencia de insuficiencia renal crónica en pacientes de alto riesgo o con enfermedad cardiovascular. Rev Esp Cardiol. 2010;63:225-8.