Pre-eclampsia: An important risk factor for chronic kidney disease frequently and unfortunately forgotten

Preeclampsia: un importante factor de riesgo de enfermedad renal crónica frecuente y desafortunadamente olvidado

Mr. Director,

In the May–June 2022 issue, García-Maset et al.[1] published the excellent information and consensus document for the detection and management of chronic kidney disease (CKD). This document, prepared jointly by 10 scientific societies, provided an update on the detection, risk factors, screening, and definition of progression of CKD. Instructively, risk factors were classified according to the stages having an effect as "susceptibility, initiating, progression and end-stage" (Table 1 of García-Maset et al.)[1] However, *the document does not refer to preeclampsia and hypertensive disorders of pregnancy as a risk factor for long-term CKD*.

CKD affects up to 6% of women of childbearing age in developed countries and it is estimated to affect 3% of pregnant women,[2] a percentage that tends to increase significantly due to delayed childbearing and the constant increase in cases of obesity and diabetes, one of the main triggers of this disease.

The prevalence of CKD in women with a previous episode of preeclampsia is not well defined. The most recent data shows that 15–20% of these patients progressed to CKD,[3] but this percentage is probably inaccurate and, actually is higher due to the usual lack of follow-up of these women in the medium and long term. In fact, preeclampsia was classically considered to be a transient and reversible renal disease that resolved one to three months after delivery. Therefore, unfortunately, it is most common that once renal function is restored postpartum, this group of patients is not followed up by a nephrologist. However, there is evidence that preeclampsia increases the risks of long-term G5D CKD.[4,5] In a study published more than 10 years ago, which analyzed the risk of developing G5D CKD in 570,000 pregnant women in Norway, it was already seen that preeclampsia during the first pregnancy was associated with a relative risk (RR) of 4.7 (95% CI 3.6–6.1) of developing G5D CKD. And this risk was accumulative among women who had been pregnant 3 or more times; preeclampsia was associated with an increase in this RR of up to 6.3 (95% CI: 4.1–9.9).[5] Likewise, in a recent meta-analysis focused on the prevalence of G5D CKD in women with a history of preeclampsia, the risk of developing G5D CKD was found to be 6 times higher in patients with a history of preeclampsia.[6] All these studies highlight the need for renal follow-up (including calculated glomerular filtration rate, measurement of albuminuria and blood pressure) in patients with preeclampsia.

It is well known that the kidney plays an important role in the development of preeclampsia and can be cause and trigger of placental dysfunction, as well as being a target organ and suffering an insult by endothelial dysfunction.[7] In addition, both entities share risk factors such as diabetes, chronic hypertension, obesity and metabolic syndrome. It is difficult to know which is the primary event and whether preeclampsia is a susceptibility risk factor, increasing the possibility of renal damage or it may be a direct initiating factor of renal damage, since preeclampsia may induce renal injury by suppressing the activity of renoprotective angiogenic factors.[7] Unfortunately, it is frequent the lack of prior diagnosis in women with early stages of CKD; in fact, a high number of pregnant women are diagnosed with CKD during the prenatal period, but already had some degree of previous renal dysfunction.[8] In underdeveloped countries, the diagnosis of advanced CKD during pregnancy is not uncommon. Furthermore, serum creatinine is not included in the profile of routine prenatal low-risk tests in Spain or in Europe, although it is known that CKD is a risk factor for developing preeclampsia and other maternal-fetal complications during pregnancy, even in early stages of kidney disease.[9] However, what is already well known is that preeclampsia is a *risk factor for progression* that can undoubtedly accelerate the deterioration of renal function[5,6,10] and, therefore, we believe that it should be included in Table 6[1] of the aforementioned consensus document as a risk factor for CKD.

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Iara DaSilva Santos[a,*], Marta Ricart Calleja[b], Giorgina B. Piccoli[c]

[a] *Servicio de Nefrología, Unidad Multidisciplinar de Alto Riesgo Nefro-Obstétrico, Hospital Universitari Germans Trias i Pujol, Badalona, Barcelona, Spain*
[b] *Servicio de Ginecología y Obstetricia, Unidad Multidisciplinarde Alto Riesgo Nefro-Obstétrico, Hospital Universitari Germans Trias i Pujol, Badalona, Barcelona, Spain*
[c] *Centre Hospitalier Le Mans, Le Mans, France*

[*] *Corresponding author.*
E-mail address: isilvasa.germanstrias@gencat.cat (I. DaSilva Santos).

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Response to the letter: "Preeclampsia: a relevant chronic kidney disease risk factor frequently and unfortunately forgotten"

Respuesta a la carta: «Preeclampsia: un importante factor de riesgo de enfermedad renal crónica frecuente y desafortunadamente olvidado»

Mr. Director,

We thank Dr DaSilva[1] for the interest on the information and consensus document for the detection and management of chronic kidney disease (CKD).[2] Her comment about the inclusion of preeclampsia as a risk factor for CKD progression is absolutely pertinent.

As she states in her letter, there are several reasons to consider its inclusion as a risk factor; among them, the progressive increase in the prevalence of CKD in women of childbearing age and in pregnant women, as well as the fact that women who have had an episode of preeclampsia are more likely to develop CKD.[3]

Furthermore, we also agree with Dr. DaSilva in highlighting the fact that CKD is underdiagnosed in these patients who have presented preeclampsia, due to the lack of long-term nephrological follow-up because it is considered to be an acute and reversible pathology.

These data show the need for renal follow-up including estimated glomerular filtration rate, measurement of the urine albumin/creatinine ratio and blood pressure in patients who have developed an episode of preeclampsia or eclampsia.

Recently, the guidelines for the management of glomerular diseases in pregnancy, include these recommendations on monitoring, among others.[4]

Until very recently, no reference had been made to the consideration of eclampsia/preeclampsia as a factor in renal progression, neither in the KDIGO 2012 guidelines[5] nor in the NICE 2021[6] guidelines. However, in the draft KDIGO 2023 guidelines, still under review, preeclampsia is mentioned as a factor in the progression of CKD, being included along with other systemic diseases with an effect on renal progression, such as systemic lupus erythematosus, HIV infection and gout.[7]

Thus, we again appreciate the suggestion made by Dr. DaSilva to include preeclampsia and hypertensive disorders of pregnancy as a risk factor for long-term CKD. But, in addi-

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