Reviewer's report

Title: Kidney disease in patients with type 2 diabetes: prevalence and associated variables in a random sample of 2,642 patients from a Mediterranean region (Catalonia, Spain).

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Reviewer: Visnja Lezaic

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Kidney disease in patients with type 2 diabetes: prevalence and associated variables in a random sample of 2,642 patients from a Mediterranean region (Catalonia, Spain)

The authors analyzed the prevalence of different degrees of renal impairment/disease in patients with type 2 diabetes (T2DM). They conducted a cross-sectional study in a sample of 2,642 T2DM patients cared for in primary care during 2007. Different variables are analyzed: demographic and clinical characteristics; pharmacological treatments; T2DM complications (diabetic foot retinopathy, coronary artery disease and stroke); and renal function variables (Glomerular filtration rate estimated with MDRD equation and albumin and or proteinuria excretion rate).

Obtained results showed the following: 34.1% of patients had kidney disease (KD), 22.9% renal impairment (RI), 19.5% albuminuria and 16.7% diabetic nephropathy (DN). The prevalence of albuminuria without RI (13.5%) and nonalbuminuric RI (14.7%) was similar. After adjusting per age, BMI, cholesterol, blood pressure and macrovascular disease, RI was significantly associated with the female gender (OR 2.20; CI 95% 1.86-2.59), microvascular disease (OR 2.14; CI 95% 1.8-2.54) and insulin treatment (OR 1.82; CI 95% 1.39-2.38), and inversely associated with HbA1c (OR 0.85 for every 1% increase; CI 95% 0.80-0.91). Isolated albuminuria without RI was inversely associated with the female gender (OR 0.27; CI 95% 0.21-0.35), duration of diabetes (OR 0.94 per year; CI 95% 0.91-0.97) and directly associated with HbA1c (OR 1.19 for every 1% increase; CI 95% 1.09-1.3).

Authors concluded that one-third of the population have kidney impairment, and advise to determine both albuminuria and eGFR in order to diagnose kidney disease.

Comments:

Major reversion

a) Methods

1. It is necessary to clearly define renal impairment. In fact, patients were divided into groups according to the different combinations of eGFR and proteinuria considered as microalbuminuria and/or proteinuria.
2. Since the cross sectional analysis is done, it is better to talk about the symptoms and signs of kidney impairment, and not about the kidney disease. Thus, the present definition of kidney disease is imprecise, and it is advisable to redefine all studied patients as a groups with various combinations of eGFR and proteinuria and/or (micro)albuminuria. Finally, the term kidney disease should be omitted in all the headlines and the text.

3. It is necessary to specify how albuminuria, proteinuria and serum creatinine are measured.

4. Authors should refer to the flow-chart scheme in the Methods

b) Results

It seems that Table 2 is not necessary and can be explained in the text. On the other hand, information about the stages of CKD, especially patients categorisation depending of eGFR and albuminuria/proteinuria (Levey AS, de Jong PE, Coresh J, El Nahas M, Astor BC, Matsushita K, Gansevoort RT, Kasiske BL, Eckardt KU. The definition, classification and prognosis of chronic kidney disease: a KDIGO Controversies Conference report. Kidney Int 2011;80(1):17-28.) is missing. My impression is that these data contribute to a better quality of work.

Table 5. According to the multifactorial analysis Years of DM duration > 10 years was associated with higher risk for RI, it is necessary to write in the text connected to table 1 how many DM2 patients had DM2 longer than 10 years. The same was true for ACEi/ARB usage. What does it mean with ..Si.. below ACEi/AR in the Table?

Figure 1. should be described with more detail: The prevalence of impaired renal function was similar in both gender until the age 70, and then higher prevalence of impaired renal function was observed in women than in men.

Is there statistically significant difference in the incidence of albuminuria according to gender?

How many patients in each age group were analyzed? Their number should be in the Table on the bottom of the Graph, just near or below the age groups.

c) Discussion should be focused on obtained results and already published data. For example: the discussion does not address the micro-and macrovascular changes. It is not enough to mention that women have a lower renal function. It is already proven.

Minor revision

-In the second paragraph “Prevalence of kidney disease” below Table 3 it should be stated that the results are not shown

-Section “Types of kidney disease and associated variables”
Table 4. the full explanation for abbreviations should be below the table.

-The text has a lot of spelling errors, and the correction of these errors as well as lector checking is necessary.
The paper included a large group of patients with DM2. The collected data would have a greater potential than is currently presented in the paper. Thus it can be considered for publication, but after considerable changes.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests' below