

## Comment on “Cardiac troponin I and creatine kinase MB isoenzyme in patients with chronic renal failure”

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### To the Editor:

We read the article “Cardiac troponin I and creatine kinase MB isoenzyme in patients with chronic renal failure” written by Larry M. Flores-Solís et al. with interest.<sup>1</sup> The authors concluded that the cut-off value proposed in this study for both cardiac troponin I (cTI) in patients with chronic renal failure (CRF) (stage 3 to 5) to diagnose acute coronary syndrome (ACS) is significantly different from that of the general population.<sup>1</sup> Thank to the authors for their contribution of a study designed and documented successfully. We believe that these findings will guide further studies about cTI and creatine kinase MB(CK-MB) levels and CRF.

cTI and CK-MB levels in patients presenting with a suspected acute coronary syndrome help in the diagnosis of patients. It was proposed in a previous study that estimation of the glomerular filtration rate based on a normal creatinine level on admission provided important information on short-term prognosis<sup>2</sup> and also it was recommended that glomerular filtration rate should be included in the risk assessment of patients with normal serum creatinine levels. But there is another issue which is the basement of the present study that patients with high creatinine levels due to CRF may be expected to have elevated cTI levels due to decreased glomerular filtration. However, cTnI is again the preferred biomarker for myocardial damage in patients with CRF<sup>3</sup> as it is one of

the least changed markers. When the patients with an elevated serum creatinine levels, especially those on dialysis treatment,<sup>4</sup> are candidates for increased cardiovascular accidents, it is an additive factor that this situation may lead to some difficulties and can be more problematic in diagnosis of patients with a suspected acute coronary syndrome.

In addition to renal failure, cTnI levels may frequently be measured above normal values in several disease states in which myocardial necrosis is not a prominent aspect, especially in pulmonary embolism, heart failure, liver cirrhosis, septic shock, and arterial hypertension.<sup>5</sup> Our challenge is on the issue that the study would be stronger if all the additional factors that might elevate cTI levels were mentioned in the study.

### Conflicts of interest

The authors declare that they have no conflicts of interest related to the contents of this article.

1. Flores-Solís LM, Hernández-Domínguez JL, Otero-González A, González-Juanatey JR. Cardiac troponin I and creatine kinase MB isoenzyme in patients with chronic renal failure. *Nefrologia* 2012;32(6):809-18.
2. Carda Barrio R, De Agustín JA, Manzano MC, García-Rubira JC, Fernández-Ortiz A, Vilacosta I, et al. [In-hospital prognostic value of glomerular filtration rate in patients with acute coronary syndrome and a normal creatinine level]. *Rev Esp Cardiol* 2007;60(7):714-9.
3. Flores LM, Hernández Domínguez JL, Otero A, González Juanatey JR. [Cardiac troponin I determination in patients with chronic renal failure]. *Nefrologia* 2006;26(1):107-12.
4. Collado S, Coll E, Deulofeu R, Guerrero L, Pons M, Cruzado JM, et al. [Prevalence of cardiovascular disease in uraemia and relevance of cardiovascular risk factors]. *Nefrologia* 2010;30(3):342-8.

5. Nunes JP. Cardiac troponin I in systemic diseases. A possible role for myocardial strain. *Rev Port Cardiol* 2001;20(7-8):785-8.

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## Response to the comment on “Cardiac troponin I and creatine kinase MB isoenzyme in patients with chronic renal failure”

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### To the Editor:

We are grateful for the comments and interest of Dr Cakar M. and his collaborators regarding our study entitled “Cardiac troponin I and creatine kinase MB isoenzyme in patients with chronic renal failure” in which we included 484 consecutive chronic renal failure (CRF) patients with suspected acute coronary syndrome (ACS). Due to CRF patients being a high cardiovascular risk population, we decided to apply a strategy to improve diagnostic sensitivity and we obtained a cardiac troponin I (cTnI) cut-off value that was significantly different from that used for the general population to diagnose ACS, although it had been reported that by decreasing the 99<sup>th</sup> percentile of cTnI (cut-off value),