

## The association between vitamin D level and extent of coronary stenotic lesions

We have read the article “Vitamin D level and extent of coronary stenotic lesions in patients with first acute myocardial infarction” by Goleniewska et al. [1]. Although vitamin D level is the most important condition for musculoskeletal system in children, it is associated with inflammatory status in adults at the present time [2]. Vitamin D has potentially improved the development of atherosclerotic process by its inhibiting effect on vascular smooth muscle cells [3]. Insufficient vitamin D levels were detected in many chronic illnesses, including common cancers, autoimmune, infectious and cardiovascular diseases with increased markers of oxidative stress, inflammation, and endothelial activation in adult individuals [4]. Vitamin D levels can also be affected by peripheral arterial disease and alcohol consumption. Additionally, obstructive sleep apnea syndrome may be associated with increased cardiovascular morbidity and mortality based on inflammation. Non-alcoholic fatty liver disease, the most common liver disease, is common in overweight/obese people and may have been associated with higher inflammatory status [5]. Also, some medications such as antihypertensive treatment including angiotensin-converting enzyme inhibitors, angiotensin receptor blocker, statins, anti-inflammatory drugs used may influence vitamin D level [6]. For this reason it would be better if the authors had mentioned these factors.

Additionally, the extent of coronary artery disease (CAD) was evaluated by calculation of Gensini scores in the present study [1]. The authors had not mentioned the inter-observer and intra-observer variability for CAD severity. It would be better to give inter-observer and intra-observer variability for CAD severity in the current study [1]. Furthermore, the Syntax score (SS) may be developed for grading the coronary complexity. The addition of clinical risk factors to the SS has been demonstrated to potentially further augment its utility to objectively evaluate the patients. The Logistic Clinical Syntax Score (LCSS) consisting of 4 continuous variables including SS, age, creatinine clearance, and left ventricular ejection fraction substantially enhances the risk stratification of CAD patients for the

outcome of all-cause death compared with the SS. LCSS was able to accurately distinguish patients with or without a clinical outcome [7]. Involving in this score, renal dysfunction may estimate the risk of mortality and morbidity for CAD. Although glomerular filtration rate (GFR)  $< 60 \text{ mL/min/1.72 m}^2$  was excluded from the present study [1], the authors did not mention the use of the measurement of GFR. Cockcroft-Gault equation and Modification of Diet in Renal Disease (MDRD) are commonly used for GFR. However, Cockcroft-Gault equation may estimate lower GFR in younger age groups in comparison with the MDRD formula, but it can measure higher GFR in older individuals compared to MDRD formula [8]. Although the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) has recently published an equation for GFR using the same variables (serum creatinine level, age, sex, and race) as the MDRD formula. The CKD-EPI equation more accurately categorized individuals with respect to long-term clinical risk compared with the MDRD formula [9].

In conclusion, vitamin D deficiency is common in patients with acute myocardial infarction as presented in the current study. However, the level of vitamin D can be affected by many conditions [10]. Further studies will evaluate all of these conditions that can affect the vitamin D level in patients with acute myocardial infarction.

**Conflict of interest:** none declared

### References

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