

## Prognostic value of carotid intima-media thickness

To the Editor,

We found the paper by Elitok et al. (1) very interesting. In the study, the authors have investigated the effect of bariatric surgery on carotid intima-media thickness (CIMT). This novel study provides the 1-year follow-up data on the effects of pronounced weight loss following bariatric surgery on surrogate measures of atherosclerosis. The current study revealed that CIMT reduction was not significant from baseline to the 6<sup>th</sup> month, whereas it became significant at the 9<sup>th</sup> month of follow-up. The 1-year results could have improved the manuscript in terms of supporting the evidence for the relationship between CIMT reduction and risk of long-term cardiovascular events.

In a systematic review and meta-analysis of the individual data from 16 studies consisting of 36.984 patients without known cardiovascular diseases (CVD) who underwent serial CIMT measurements (mean follow-up of 7 years), it was revealed that when the yearly progression rate is recalculated for various CIMT measurements (mean and maximum CIMT values of the common, bifurcated, and internal carotid arteries), there was no association between CIMT progression and the risk of future cardiovascular events (2). These findings are supported by a more recent meta-analysis of data including 31 studies consisting of 89,070 patients showing a consistent association between CIMT value and the combined endpoint of myocardial infarction, stroke, and cardiovascular death. However, there was no association between CIMT change and the risk of cardiovascular events (3). Moreover, it was reported that CIMT is not an independent factor for CVD prognosis (4). Thus, there is no obvious proof of a relationship between CIMT progression and the risk of future cardiovascular events due to various potential methodological and biological reasons. Therefore, serial CIMT measurement for CVD risk assessment is not recommended.

Previously, repeated measurement of analysis of variance or nonparametric Friedman test was the approach to examine longitudinal data in terms of temporal changes. Currently, a linear mixed model (LMM) is more often recommended due to its potential to provide more suitable data in terms of temporal changes (5, 6). Therefore, in our opinion, using LMM instead of the Friedman test might provide more information for your study, which can be included in this letter.

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### Author's Reply

To the Editor,

We would like to thank the authors of the letter for their criticism about the present study published in the March issue of *Anatol J Cardiol* 2020; 23: 218-22 (1). The present study revealed that CIMT reduction was not significant from baseline to the 6<sup>th</sup> month, whereas it became significant at the 9<sup>th</sup> month of follow-up (1).

The first meta-analysis of several large-cohort studies that assessed the association between carotid artery intima-media thickness (CIMT) and the risk of future cardiovascular events in-