Reviewer’s report

Title: Omega-3 intake is associated with attenuated inflammatory response and cardiac remodeling after myocardial infarction

Version: 0 Date: 27 Feb 2019

Reviewer: Wasantha Jayawardene

Reviewer’s report:

Reviewer's Comments:

This study is a secondary data analysis to investigate whether omega-3 polyunsaturated fatty acids intake prior to a ST-elevation myocardial infarction is associated with attenuation of the MI-related inflammatory response and cardiac remodeling. The topic is important and can be considered as an extension of findings from prior studies. However, this reviewer has several comments.

Line-58: Authors found that "The intake of -3 below the median (<1.7 g/day) was associated with a short-term increase in hs-C-reactive protein [OR:1.77 (1.17-2.66); p=0.007], Interleukin-2 [OR:1.95 (1.01-3.75); p=0.045], brain-type natriuretic peptide [OR:2.40 (1.21-4.75); p=0.012], left-ventricle end-diastolic volume [OR:11.72 (1.16-118.04)]; p=0.037] and decreases in left-ventricle ejection fraction [OR:4.36 (1.16-16.33); p=0.029] after adjustment for covariates." This doesn't mean that the intake of -3 above the median (>1.7 g/day) is associated with changes in acute inflammatory biomarkers, left ventricular remodeling, etc. in the opposite direction. Therefore, authors' conclusion that "These findings suggest that an elevated daily consumption of -3 may mitigate outcome-determining changes after STEMI, such as acute inflammatory response and late left ventricular remodeling" is not consistent with their finding. Authors should either present their findings for consumption of -3 above median (and conclude accordingly) or conclude that consumption of -3 below median may result in worse acute inflammatory and left ventricular remodeling outcomes.

Line-82: Revise the phrase "at the time of the coronary event" to clarify that you are referring to the period prior to the event.

Line-96: Please correct this: "It was not included patients"

Line-123: Authors need to provide citation or database for the photographic record for dietary surveys. Recall bias can be high when you ask MI patients about three months dietary history, frequency, and amounts, so you need to admit it clearly in limitations.

Methods: Authors don't have to describe clinical and biochemical measurements, echocardiography, and CMRI in detail, if these are described in the original study. You can summarize them and provide reference to the original source for specifics. However, more relevant measurements, such as -3 and other nutrient intakes should be provided in detail.
Line-147: Word "data" is plural. Also it should be corrected as "normally distributed".

Line-150: "comparison" or association?

Line-155: The sentence starting with "Multivariable binary logistic regression was used to" is not clear. Are predictor variables continuous or did you make them binary? Also, why did you use binary logistic regression, but not repeated measures ANOVA, considering that you have multiple time-points?

Line-227: This is not clear: "possibility of a play of chance due to the observational nature of this study"

Line-239: Please explain what you mean by "Indeed, we cannot rule out the possibility that individuals who consume more ω-3-rich foods also have undetected or unknown characteristics that may indirectly mediate the study findings"? If you are referring to confounding, describe them. If you are referring to recall bias or something else, state them explicitly.

Line-355: Although this is not RCT, show the time-points you assessed and omega-3 groups in figure-1.

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