International Journal of Cardiology 274 (2019) 355

Contents lists available at ScienceDirect

International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

Letter to the Editor

Usefulness of red blood cell distribution width to stratify individuals with elevated homocysteine levels: Implications in the general population

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ARTICLE INFO

Article history:
Received 1 June 2018
Accepted 6 June 2018

Keywords:
Red blood cell distribution width
Homocysteine
General population
Cardiovascular disease
Oxidative stress

The recent study by Peng et al. [1] stated that red blood cell distribution width (RDW) might predicted homocysteine (Hcy) levels among 344 participants enrolled in hospital health check-up. Although elevated RDW and Hcy are modifiable risk factors and screening tools of cerebral and cardiovascular diseases, whether RDW is informative in predicting hyperhomocysteinemia remains unclear in the general population. Therefore, we aimed to explore this issue at a population level in 8186 subjects, a subset of NCRCHS (Northeast China Rural Cardiovascular Health Study). Detailed description of NCRCHS design and methods has been published [2]. Total Hcy levels ≥ 15 μmol/L were defined as hyperhomocysteinemia [3].

Multivariable linear regression analyses demonstrated that there was positive correlation between RDW and Hcy (nonstandardized β coefficient, 0.54; 95% confidence interval [CI], 0.17–0.92) after controlling for age, sex, race, SBP, DBP, FPG, LDL-C, HDL-C, BMI, hemoglobin, neutrophil, lymphocyte, and platelet counts, diet score, smoking, drinking, history of cardiovascular diseases (coronary heart disease, arrhythmia, heart failure, and stroke), and medication use (antihypertensive, antidiabetic, and lipid-lowering). Notably, a 1-SD elevated RDW was associated with an increased odd of hyperhomocysteinemia (odds ratio [OR], 2.14; 95% CI, 1.33–3.46) in fully adjusted multivariable logistic regression analysis. In a similar model, adjusted OR of hyperhomocysteinemia for those in the fifth RDW quintile was nearly double when compared with those in the first quintile (OR, 1.80; 95% CI, 1.14–2.85).

Significant association of RDW with Hcy supported public health measures that seek to prevent cardio-cerebrovascular diseases by implementing more aggressive population-level intervention efforts in individuals with increased RDW values.

Conflict of interest

None.

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https://doi.org/10.1016/j.ijcard.2018.06.018