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Letter to the Editor

Heart failure and vitamin D receptor gene

Dear Editor,

I have read the article entitled "Dietary vitamin D and risk of heart failure in the Physicians' Health Study" by Robbins et al. [1] with great interest, recently published in Clinical Nutrition 2016; 35: 650–3. The investigators reported that higher intake of dietary vitamin D was not associated with incident HF in this population of professionally-employed middle-aged males [1].

Hsia et al. showed that 400 IU of vitamin D3 supplementation did not decrease the risk for HF hospitalization compared to placebo in the Women's Health Initiative sample of over 36,000 post-menopausal women [2]. Donneyong et al. reported that vitamin D and calcium supplementation reduced the risk for incident HF by 37% in post-menopausal women with a "low-risk" profile compared to those with a "high-risk" profile [3].

Fok1 polymorphism of vitamin D receptor gene (VDRG) has been associated with increased susceptibility to multiple diseases and disorders. Investigation of the involvement of this polymorphism with the cardiovascular system has been demonstrated in terms of association with plasma renin activity [4].

Genetic link between vitamin D and cardiovascular health was demonstrated. The association of the mutant allele with CAD, despite the absence of significant results in the distribution of genotypes between patients and controls [5]. Fok1 polymorphism of the VDRG is a potential genetic marker for cardiovascular disease [5]. Vitamin D receptor variants, resulting from the Fok1 polymorphism, may differentially interact with the different vitamin D responsive elements on different target genes.

With this knowledge, the controversial results of heart failure patients who had vitamin D supplement could be caused by fok-1 gene mutation. VDRG mutations should be considered when evaluating the association between vitamin D and cardiovascular diseases.

Conflict of interest

The author declare no conflict of interest.

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