

Non-thyroidal illness syndrome and erectile function in males undergoing coronary artery bypass graft

To the Editor,

I have read the article entitled "Nebivolol compared with metoprolol for erectile function in males undergoing coronary artery bypass graft" by Aldemir et al. (1) with great interest, which was published in *Anatol J Cardiol* 2015. In their study, the authors reported that nebivolol exerts protective effects on erectile function against the disruptive effects of cardiopulmonary bypass graft (CABG) in patients undergoing CABG.

CABG is often the cause of non-thyroidal illness syndrome (NTIS). NTIS is a state that is characterized by low triiodothyronine (T3) levels and high reverse T3 levels, with normal or low thyroxine levels and normal, low-normal, or low thyroid-stimulating hormone (TSH) levels. NTIS occurs in a significant number

of patients undergoing CABG (2). The low T3 level is associated with higher marker levels of inflammation and increased endothelial dysfunction. In a previous study, it was demonstrated that the treatment of endothelial cells with T3 increased endothelial nitric oxide synthase (ENOS) phosphorylation and activation. ENOS is an important factor in cardiovascular homeostasis and erectile function (3). Moreover, it has been reported that beta blockers, such as propranolol, atenolol, and metoprolol, could reduce total T3 levels (4). Is there any significant difference in NTIS incidence between the two groups? Furthermore, it is well established that hypothyroidism may be associated with a decrease in serum testosterone, DHEA, and DHEA sulfate levels. I believe that patients with hyper- and hypothyroidism should be excluded from the study.

In addition, nitric oxide (NO) has been found to inhibit iodine reuptake and organification in studies (5). The authors stated that there is no significant difference in nitroglycerine use for each group. Hence, because these effects increase with dose and duration, authors should state data regarding the dose and duration of nitroglycerine use as NO donor. Moreover, I believe that these confounding factors can affect the results of this study. To verify the beneficial effects of nebivolol on erectile function in patients undergoing CABG, all factors associated with ENOS activation should be considered.

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Accepted Date: 09.12.2015

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DOI:10.14744/AnatolJCardiol.2015.6884

