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Research Letter

Oxidative stress is associated with not only coronary artery disease on statin therapy but also diabetes mellitus and hypertension

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We have excitedly read the paper of Palazhy et al.[1] entitled 'Elevated oxidative stress among coronary artery disease patients on statin therapy: a cross sectional study' published in the May–June issue of *Indian Heart J*. 2015; 67(3): 227–32. They investigated the oxidative stress and novel coronary artery disease risk factors (e.g., apolipoprotein B, lipoprotein (a), homocysteine) among coronary artery disease patients on statins. They evaluated the oxidative stress by calculating glutathione, glutathione peroxidase, superoxide dismutase, ascorbic acid, malondialdehyde, and oxidized LDL. They also compared apolipoprotein B, lipoprotein (a), homocysteine, and lipid profiles between groups. Investigators allocated the patients to three groups as following: Group 1, healthy controls ($n = 84$); group 2, subjects with diabetes mellitus (DM) and coronary artery disease on statin therapy ($n = 151$); and group 3, subjects with diabetes mellitus ($n = 80$). The patients in Group 1 and Group 3 were not on statin therapy. Their analyses revealed higher oxidative stress and lower antioxidant status in Group 2 compared to those in both Group 1 and Group 3. Therefore, they concluded that oxidative stress remained higher in coronary artery patients, even though they were on statin therapy. However, this interpretation does not make sense because groups were different with regard to not only presence of CAD but also hypertension and DM. However, oxidative stress parameters and others might be affected by not only statin therapy and coronary artery disease but also diabetes mellitus and hypertension. Some studies previously reported an increased oxidative stress in hypertension.[2,3] Another study showed that malondialdehyde significantly increased in hypertensive patients compared with normotensive controls.[4] On the other hand, as well as oxidative stress parameters, novel atherosclerotic indicators might be affected by hypertension. For example, Baszczuk et al.[5] revealed that hypertensive patients with high homocysteine tended to develop atherosclerosis. Taken together, the results of this study are not sufficient to say that coronary artery disease itself, even under statin therapy, is associated with higher oxidative stress. This uncertainty might be overcome with the inclusion of coronary artery disease patients who were under statin therapy but without DM and hypertension into the study.

Conflicts of interest

The authors have none to declare.

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