Cardiovascular Safety of Oral Antidiabetic Medications: Need of the Hour

Sir,
The editorial by Singh AK regarding the comparative analysis of recent cardiovascular (CV) outcome trials of antidiabetic medications was very informative. Diabetes and coronary artery disease are intricately related. Coronary artery disease accounts for 75% of hospitalization in diabetes patients.[1,2] Population-attributable risk of acute myocardial infarction due to diabetes is 33%.[3] Among various presentations of CV diseases (CVDs), heart failure and peripheral vascular disease are most common manifestation in type 2 diabetic patients.[4] Diabetes itself is considered as coronary heart disease equivalent.[5] As far as India is concerned, the incidence of CVD has gone up by 24.8% in people between the age group of 25 and 69 years.[6] Age-standardized CVD mortality rates among males and females in India are 363–443 and 181–281 per 100,000 population, respectively.[7] Around 50% of coronary artery disease patients have diabetes and 70% of patients have some form of glucose intolerance.[8] Both diseases have great treatment relevance as for as the effect of treatment of one disease on the status of other disease is concerned.

Coronary artery disease patients are on predominantly four classes of medications – antiplatelet, antianginal, antihypertensive, and lipid-lowering medications. Aspirin (acetylsalicylic acid) is found to be beneficial for glycemic control.[9] Antianginal medications such as ranolazine have a beneficial effect on glycemic control.[10] Among different antihypertensive medications, increased rates of diabetes have been reported with thiazide diuretics and beta-blockers, but not with angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, or calcium channel blockers.[11] Lipid-lowering agent statins are known to increase the risk of diabetes.[12] However, in all these classes of medications, the beneficial effects are minimal so as to recommend these agents as an independent antidiabetic medication and risks are outweighed by the benefits so as to continue their use for the required purpose.

In case of antidiabetic medications, dipeptidyl peptidase-4 inhibitors, sodium-glucose cotransporter-2 (SGLT2) inhibitors, and glucagon-like peptide-1 (GLP-1) analogs are the recent new molecules and are being extensively used due to their various beneficial effects. All the three classes of agents along with metformin are recommended as monotherapy ahead of sulfonylurea, glinides, and thiazolidinediones for the treatment of diabetes.[13] Furthermore, all these three classes of medications are recommended as preferred add-on therapy ahead of sulfonylurea, glinides, and thiazolidinediones for the treatment of diabetes.[13] Hence, the recent outcome of various CV safety trials is quite relevant to justify the choice of these three classes of antidiabetic medications. As mentioned in the article, GLP-1 analog (semaglutide > liraglutide) is the best choice when major adverse CV event and nonfatal stroke are considered whereas SGLT2 inhibitor (empagliflozin) is the best choice when all-cause mortality or CV death is concerned. Cost being the important deciding factor in diabetes treatment in developing countries like India, the CV safety data of these three classes of drugs are further going to support the cost–benefit rationale of prescription.

As many diabetic patients have concomitant CVD, it is a common query from patients regarding the effect of medications on other existing diseases. Most of the times, concern is about the effect of antidiabetic medications on heart problems. Hence, it is necessary for a clinician to know the CV effects of antidiabetic medications. The recent analysis will definitely widen the knowledge of clinicians and help them take a correct scientific decision regarding the choice of antidiabetic medications in diabetic patients with concomitant CVD. As the CV safety data for any new antidiabetic molecule are must, such studies and their knowledge among clinicians are the need of the hour.

Conflicts of interest
There are no conflicts of interest.

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