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Letter to the Editor
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Response to 'Atherosclerotic Cardiovascular Disease or Heart Failure: First Cardiovascular Event in Adults with Prediabetes and Diabetes'

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Letter to the Editor

I agree with the ultimate findings of the study that Black women with diabetes are more likely to develop HF as their first CVD event, whereas individuals with diabetes from other race-sex groups are more likely to present first with ASCVD. These results can inform the tailoring of primary prevention therapies for either HF- or ASCVD specific pathways based on individual-level risk [1]. However, it seemed noteworthy to mention few more points that would have enriched the conclusion of the article. The study has drawn numerous concerns due to the possibility of recall bias and improper documentation of patients, which could be addressed if authors had included present cases of that time. Also, conducting a study at a particular location could create bias due to different socioeconomic, health, and environmental conditions.

Firstly, the long-term diabetic patients were found to be at a high risk of mortality caused by CVD. Prediabetes could increase mortality in patients with CVD or atherosclerotic heart disease. Moreover, the risk of coronary heart disease and stroke would be higher in people with impaired glucose tolerance; the fasting blood glucose concentration for deaths caused by impaired fasting blood glycemia was 6.1 mmol/L to 6.9 mmol/L. Hyperglycemia causes increased hematopoiesis and ROS-producing neutrophils, which leads to atherosclerosis development during prediabetes. In prediabetic patient, extracellular vesicles and miRNAs are involve in the development of atherosclerosis [2].

Secondly, the cardiac and inflammatory biomarkers are included in the composite biomarker score based on previous associations of each with incident HF. These included high-sensitivity cardiac Troponin-T (hs-cTnT), N-Terminal proB-type Natriuretic Peptide (NT-proBNP), high-sensitivity C-Reactive Protein (hs-CRP), and Electrocardiographic-based LVH (ECGLVH) [3]. Some findings suggest that after controlling for height and body size, women without CVD at baseline were at higher risk for AF than men, suggesting that sex differences in body size account for much of the protective association between female sex and AF [4].

Smoking increases cardiovascular mortality in Type 2 Diabetes, coronary heart disease, HF, PAD, and stroke, while secondhand smoke increases the risk of cardiovascular disease and all-cause death in general populations [5].

Currently, lifestyle interventions, such as diet and exercise, are the preferred options. In addition, medical therapy, such as treatment with α-glucosidase inhibitors (acarbose), biguanides (metformin), PPAR-γ agonists (rosiglitazone, pioglitazone), metatinib (nateglinide) and pancreatic lipase inhibitor (orlistat) is also highly used to cure prediabetes. Bariatric surgery is suitable for patients who are obese and prediabetics [2].

Lifestyle modifications for T2D patients, including physical activity, medical nutrition therapy, quitting smoking, diabetes self-management education, and psychosocial care, significantly reduce the incidence of CVD and CVD death. Obesity and central/visceral adiposity are linked to adverse cardiovascular disease outcomes, with obesity increasing the risk by two times and diabetes with metabolic syndrome by five times. Obesity directly contributes to CVD through cardiac adaptations, while indirect effects include worse endothelial function, inflammation, dyslipidemia, and hypertension [5].

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