Cardiovascular Autonomic Dysfunction in Patients with Diabetes Mellitus Type 1

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Dear Editor,

Our study group in Ischemic Heart Disease would like to congratulate the authors of the article " Microvascular complications and cardiac autonomic dysfunction in patients with diabetes mellitus type 1"[1], which deals with the diagnosis of subclinical dysautonomia. In our view, diabetic patients with nephropathy and/or retinopathy also have a great chance to have micro- and macrovascular injuries. The sick sinus syndrome often originates from ischemic lesions arising from right coronary lesions[2-4]. One of its manifestations is gaining the impairment in reaching maximum heart rate at exertion[5,6].

In the present study, we observed that the submaximal heart rate (HR) in patients with nephropathy and retinopathy (considering the mean age of the groups shown in Tables 1 and 2, minus 195) was 154 bpm. However, these patients reached submaximal HR of 148 bpm. Thus, we would like to know if the stress test used in patient selection also gave rise to the submaximal HR data that were used in data analysis, or if two exercise tests were performed. Was the documentation of absence of coronary artery disease made only based on the selection stress test as shown in Tables 1 and 2? If so, were the results the same when excluding patients with coronary artery disease?

Keywords

Primary dysautonomias/complications; diabetes mellittus, type 1.

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Reply

Dear Editor,

We thank the comments regarding our recently published study in the Brazilian Archives of Cardiology[1]. In fact, patients with diabetes and microvascular disease are at increased risk of macrovascular disease than those without these complications. During the study, patients with known diagnosis of ischemic heart disease were excluded, and those who underwent the stress test were clinically asymptomatic for the presence of coronary artery disease. Three patients,

however, exhibited electrocardiographic criteria during the test and were excluded from the study. Thus, we evaluated 81 asymptomatic individuals whose exercise tests showed no alterations suggestive of ischemia, as described in the article. We performed only one stress test, which was used for the study analysis.

For patients with retinopathy (n = 44) the mean maximum HR was 153 bpm, and for patients with nephropathy (n = 23) the mean maximum HR was 149 bpm. Patients with nephropathy most frequently had risk factors, such as hypertension and smoking, than patients with retinopathy. Therefore, they may have more cardiovascular autonomic neuropathy (CAN), a common complication of neuropathy in patients with type 1 diabetes mellitus[1]. The etiology of heart disease in patients with diabetes may involve many factors, including CAN, Ischemic Heart Disease (IHD) and diabetic cardiomyopathy[1-3]. Nevertheless, we believe that in this case, the probable cause for the non-achievement of the predicted maximum heart rate in the group with nephropathy was the presence of CAN, and not IHD.

Sincerely,

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Jorge L. Gross

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