

Effects of Sodium Glucose Co-Transporter 2 Inhibitors on Exercise Stress Test Parameters in Diabetic Patients



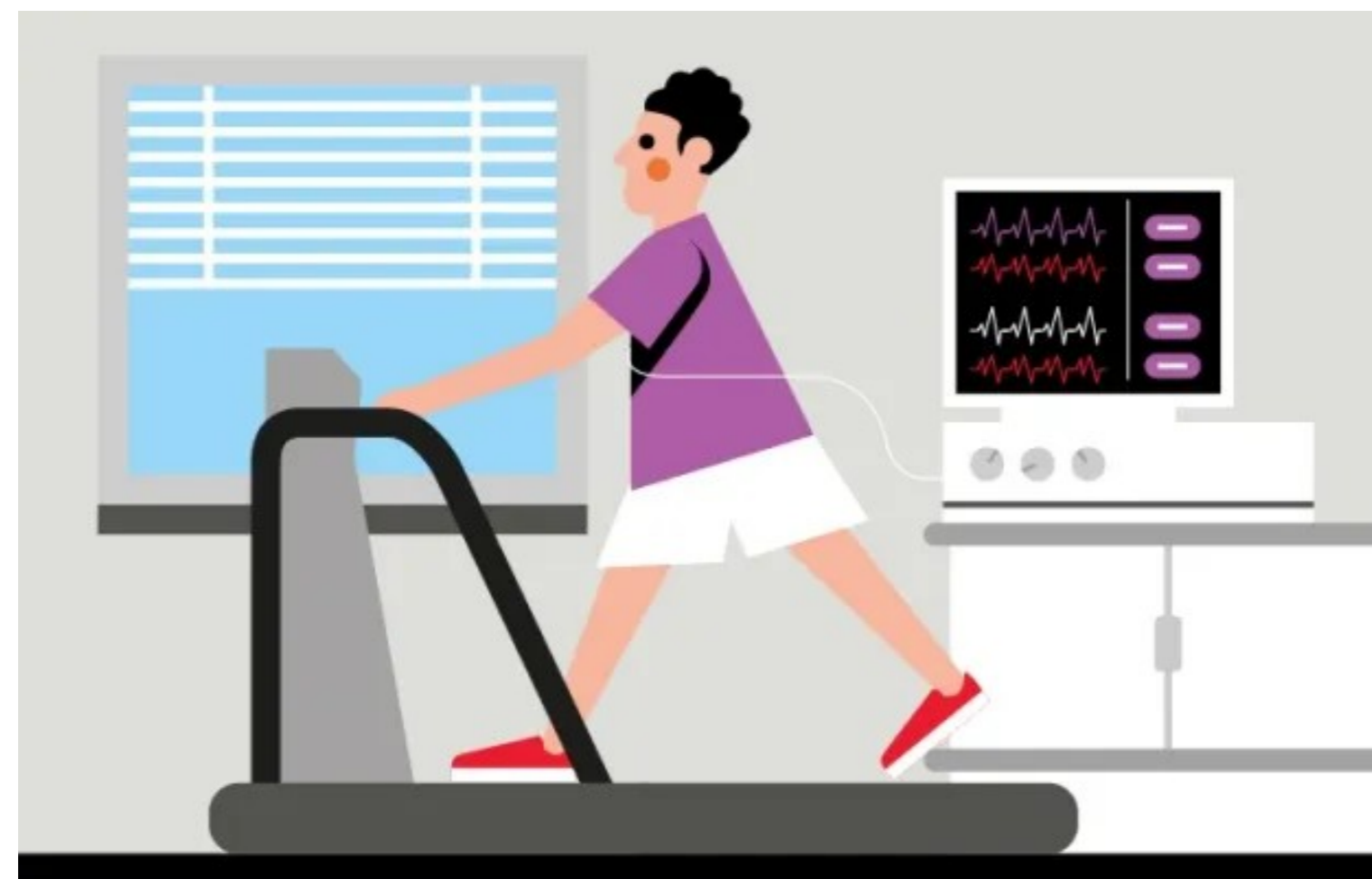
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INTRODUCTION

The aim of this study is to evaluate the effects of sodium glucose co-transporter 2 inhibitors on exercise stress test parameters in patients with exaggerated blood pressure response (EBPR) during treadmill exercise stress test.



RESULTS

119 patients were included in our study. The majority of patients were young-middle-aged (mean age 50.5 ± 11.6 years, youngest 18 years, oldest 76 years) men (85 men, 71.4%). One third of the patients were smokers (28 patients, 23.5%). 49 patients had hypertension (41.2%), 24 patients had diabetes (20.2%), 38 patients (31.9%) had dyslipidemia, and 34 patients (34.3%) had coronary artery disease. EBPR was observed in 52 patients (43.7%). As expected, CAD was observed in 29 (59%) of the hypertensive patients (49 patients), while it was detected in approximately half of the coronary artery patients and smokers (19 of 34 CAD patients, 55.9%; 28 smokers). on the 13th, 46.4%). The patients with the highest EBPR were diabetics; blood pressure increased excessively during exercise in 17 of 24 patients (70.8%). This situation was significantly higher compared to non-diabetics (17/24 vs 39/95, $p=0.01$). Since only 3 of the diabetic patients used SGLT-2i, we could not evaluate the relationship between blood pressure response to exercise and SGLT-2i use in diabetic patients who underwent exercise testing.

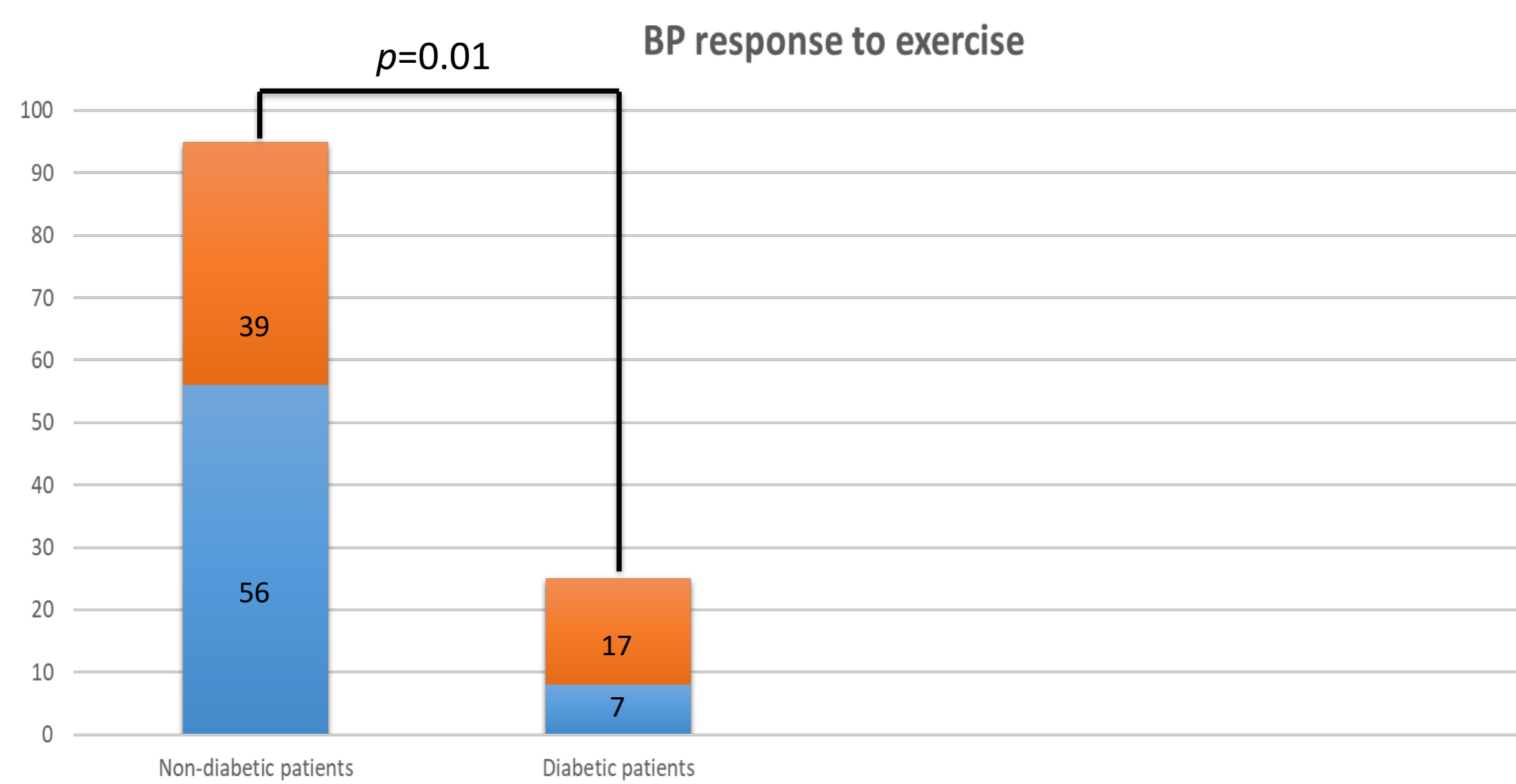
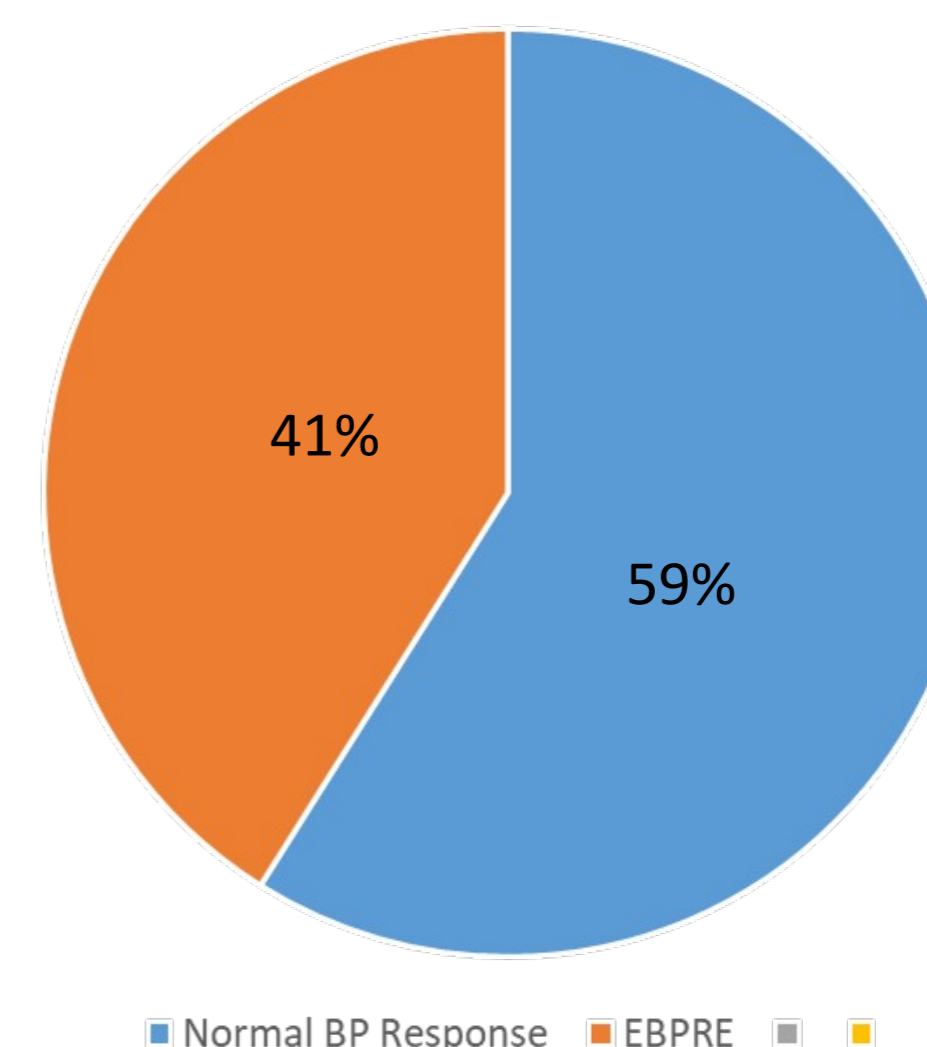


Table 1: BP response to exercise

Non-diabetic patients



Diabetic patients

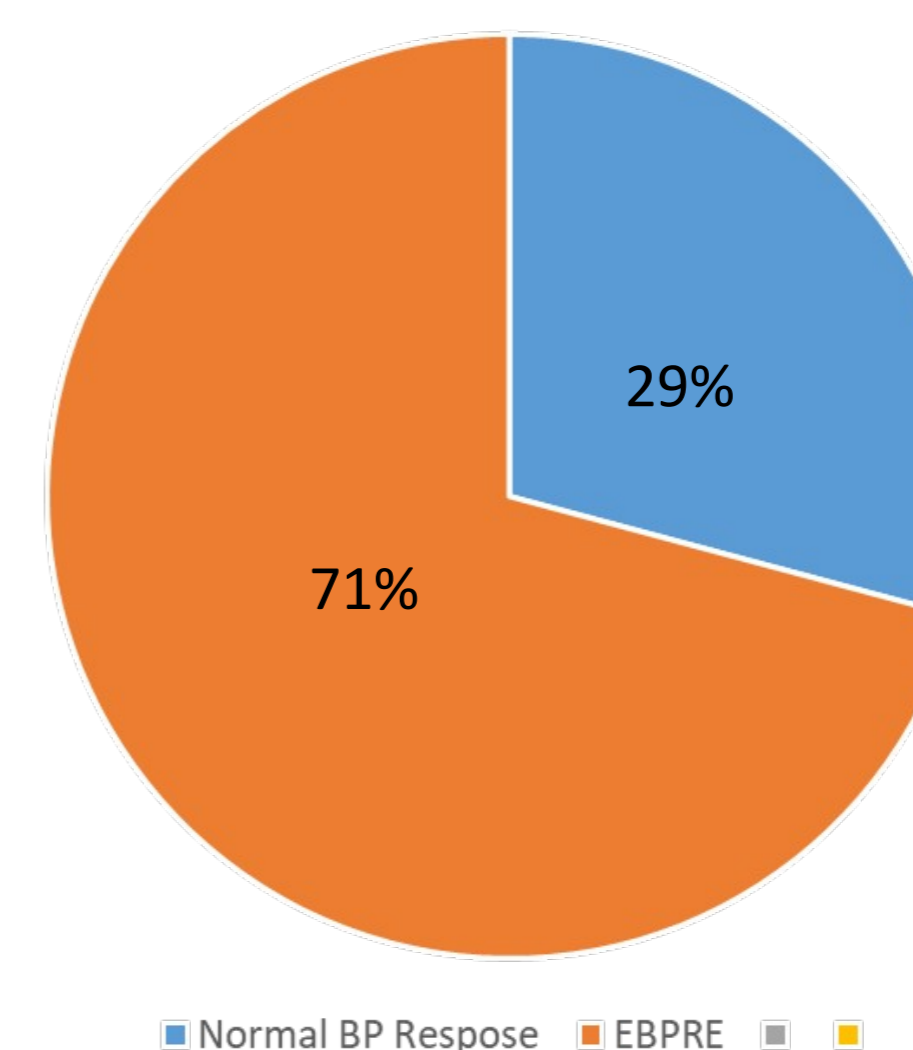


Table 2: Comparison of blood pressure response in non-diabetic and diabetic patients

METHODS

The study was designed as a cross-sectional observational study. Exercise test, laboratory results, anthropometric and medical data of asymptomatic individuals who applied to the cardiology outpatient clinic for routine cardiovascular evaluation between May and September 2023 and underwent treadmill exercise test were retrospectively examined. Individuals with electrocardiogram (ECG) changes (horizontal or downward sloping >1 mm ST depression, complex arrhythmia) or ischemic symptoms that were evaluated as positive during the exercise test were excluded from the study. Those with chronic liver and/or kidney failure, thyroid dysfunction, and chronic obstructive pulmonary disease were excluded from the study. Those using decongestant drugs, steroid users, and those with hematological, inflammatory, oncological or infectious diseases were not included in the study. Individuals were grouped into two groups: those with EBPR and those without (control group), and statistical analyzes were conducted on these groups. The study protocol was approved by the ethics committee. Statistical analysis of the data obtained from the study was performed in the SPSS for Windows Version 16.0 package program.

CONCLUSION

As we expected, EBPR was detected more frequently in diabetic patients. We could not evaluate whether the use of SGLT-2i, which has a blood pressure correcting effect, reduces EBPR due to the limited number of patients. We think that we can reach a conclusion on this issue by expanding our study with diabetic patients using SGLT-2i by meeting with diabetes clinics.

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