ELECTROCARDIOGRAPHIC CHANGES, OLDER INDIVIDUALS FALLERS IN THE PREVIOUS YEAR- A CASE CONTROL STUDY

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TITLE
Electrocardiographic Changes, Older Individuals Fallers in the Previous Year- a Case-Control study

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Background
Fall is associated with increase morbidity and mortality in older adults with potentially devastating psychological and socioeconomic impact on society. Falls associated with cardiovascular risk factors are associated with increased risk of injurious fall. We conducted a case-control study to determine potential differences in electrocardiography (ECG) changes between fallers and non-fallers.

Methods
Participants aged ≥65 years old with 2 or more falls or one injurious fall in the previous 12 months were recruited. Age-matched control participants were recruited from community dwelling older volunteers. Information on symptoms, heart rate, PR interval, QRS complex, corrected QT (QTc) interval, and any abnormalities including cardiac axis, ST segment, T-wave, left ventricular hypertrophy or conduction defects were obtained for 12-lead ECGs by two independent assessors, one of whom is an experienced cardiologist. Any disagreements addressed through discussion.

Results
267 subjects (155 fallers and 112 controls), mean (SD) age = 75(7), 69% women, were recruited into the study. The ECG characteristics between fallers and non-fallers were evaluated. Twelve-lead ECGs were not available for five fallers and 13 non-fallers. Atrial fibrillation was present in 5 fallers and 3 non-fallers, and these were excluded for the analysis of PR intervals. There was a significant difference in mean PR interval (p=0.005) and QTc (p=0.008) between fallers and non-fallers following adjustment for age and the presence of diabetes. There was no significant difference in other ECG characteristics between fallers and non-fallers.

Conclusion

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CONCLUSION
The PR, and corrected QT intervals were significantly longer among fallers. These ECG changes have been associated with supraventricular and ventricular bradyarrhythmias and tachyarrhythmias respective. Our study has highlighted the need for ECG evaluation of individuals with falls especially if a history of syncope was present. Future studies should seek to evaluate the arrhythmic potentials associated with these ECG changes among fallers.

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