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CLINICAL IMPACT OF BRADYCARDIA ON THE INCIDENCE OF ATRIAL FIBRILLATION IN A POPULATION-BASED COHORT STUDY

Poster Contributions

Poster Hall B1

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Background: A higher heart rate is known to be a risk factor for mortality and morbidity from coronary disease and all cardiovascular diseases. However, no prospective study has examined the association between lower resting pulse rate and incident atrial fibrillation (AF) in general population.

Methods: A total of 6,728 participants (aged 30-84 years; 47% men) without prior AF were followed for 12.9 years, who underwent examinations at baseline in this Japanese Study. AF was diagnosed when AF or atrial flutter was present on electrocardiograms during a biannual health examination or when AF was indicated as annual questionnaires responses or medical records. The resting pulse rate (RPR) at baseline was categorized into four groups (RPR<60, 60-69.5, 70-79.5, ≥80 beats per minute (bpm)) using average value of two consecutive measurements. Cox proportional hazards ratios (HRs) and 95% confidence intervals (CIs) for incident AF were analyzed after adjustment of cardiovascular risk factors.

Results: During the follow-up, we identified 242 cases of incident AF (166 in men and 76 in women). After adjustment of age, sex, body mass index, hypertension, hypercholesterolemia, diabetes, current smoking, current alcohol drinking, and chronic kidney disease, HRs (95% CIs) of the group with RPR<60, 70-79.5, and ≥80 bpm for incident AF compared with the group with RPR 60-69.5 bpm (reference group) were 1.74 (1.15-2.62; p<0.01), 0.95 (0.70-1.29; p=0.74) and 0.83 (0.55-1.24; p=0.35), respectively. Even excluding those with past history of cardiovascular and/ or cerebrovascular diseases hardly altered these results.

Conclusion: This prospective cohort study is the first report that bradycardia at RPR measurement was associated with an increased risk for incident AF in general population. We should pay careful attention to bradycardia-related incident AF and its implications for arrhythmogenesis.