

Prevalence and Mortality of the Brugada-Type Electrocardiogram In a Japanese Population -Community- based Study-

Yoko Miyasaka MD, PhD

Cardiovascular Division, Department of Medicine II,
Kansai Medical University, Osaka, Japan

Topic; Prognostic aspects, non-invasive markers, and risk stratification, and benign forms.

Hospital-based studies showed 11 to 38% annual fatal arrhythmic events in patients with the Brugada syndrome. However, there are few data available on the mortality of subjects with the Brugada-type electrocardiogram (ECG) in a community-based population. We studied the prevalence of the Brugada-type ECG in a community-based population in Japan and prospectively examined whether this sign was associated with an increased mortality.

Our study population consisted of subjects who had ECGs during a health examination for adult citizens in Moriguchi, Osaka, Japan. A Brugada-type ECG was considered when the 12-lead ECG with right bundle-branch block (rsR' or Rsr' pattern in V1 lead) and ST-segment elevation in the right precordial leads. ST-segment elevation was defined as an elevation of the J point of at least > 0.1 mV in leads V1 to V2 to V3. The outcome event was all-cause mortality. Information about death and relocation from Moriguchi city was obtained prospectively from the residents' record of the city.

Our study population consisted of 13,929 subjects with the mean age of 58 ± 10 years and 27% of men. The Brugada-type ECG was found in 98 subjects (0.70%, 95% confidence interval (CI) 0.57-0.86%). Subjects with the Brugada type ECG had a similar mean age (58 ± 9 years) to that of those without (58 ± 10 years). Prevalence of men in subjects with the Brugada-type ECG (81%) were significantly higher than that of those without (26%, $p < 0.0001$). In the Brugada-type ECG, the coved type ST-segment elevation was found in 38% and rsR' pattern in V1 lead was found in 41%. The typical coved type ST-segment elevation with rsR' pattern in V1 lead ("typical" Brugada-type) were found in 17 subjects (0.12%, 95% C.I. 0.07-0.20%) of 13,929 study subjects. Of men, the Brugada-type ECG was seen in 2.14% (95% CI 1.70-2.66%) and the "typical" Brugada-type ECG was seen in 0.38% (95% CI 0.21-0.64%).

During 2.6 ± 0.3 years of follow-up, there was 1 death among the 98 subjects (1.0%, 95% CI 0.03-5.6%) with the Brugada-type ECG, whereas there were 139 deaths of 13,831 subjects (1.0%, 95% CI 0.85-1.2%) without the Brugada-type ECG. The Log-Rank test showed no significant difference in all cause mortality between subjects with and without the Brugada-type ECG ($p = 0.9943$). The subject who died with the Brugada-type ECG was a 56 years old man. He

had a saddleback ST-segment elevation. He died suddenly. There was no information about his history of syncope and family history of sudden death.

We conclude that a Brugada-type ECG may be found in a substantial number, especially in men. The total mortality of subjects with the Brugada-type ECG was not different from that of those without in a community-based population. We suggest that mortality of the Brugada-type ECG in a community-based population is much lower than that in hospital-based population previously reported.

We are still continuing observation about death and relocation in Moriguchi city now. During 4.5+0.7 years of follow-up, death of the 98 subjects with the Brugada-type ECG was not increasing.

Reference

Miyasaka Y, Tsuji H, Yamada K, et al. Prevalence and mortality of the Brugada-type electrocardiogram in one city in Japan. *J Am Coll Cardiol* 2001; 38: 771-4.