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Fever induced Brugada syndrome is more common than previously suspected: A cross-sectional study from an endemic area

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Background: Brugada syndrome (BrS) is defined as presenting of type-1 Brugada pattern (BrP). BrS can also be induced by fever. We reported a high prevalence of fever induced BrS from the emergency department of Buriram hospital, Thailand.

Method: Febrile (oral temperature $\geq 38^{\circ}\text{C}$) and non-febrile patients underwent standard and high leads electrocardiogram. Risk factor and cardiac symptoms were recorded. The prevalence of BrS, type-2 BrP and early repolarization pattern (ERP) were demonstrated.

Results: 401 patients, 152 febrile and 249 non-febrile, were evaluated. There was no difference in age and gender between groups. BrS was identified in 6 febrile patients (5 males and 1 female) and 2 males in non-febrile patients. The study demonstrated higher prevalence of BrS in febrile group compared to non-febrile group (4.0% VS 0.8%, respectively, $p=0.037$). Among fever induced BrS, 3 patients (50.0%) had experienced cardiac symptoms and 2 patients (33.3%) had history of first-degree relative sudden death. No ventricular arrhythmia was observed. All of type-1 BrP had disappeared after fever subsided. We found no difference in prevalence of type-2 BrP in febrile and non-febrile group (2.0% VS 2.8%, respectively, $p>0.05$) as well as ERP (3.3% VS 6.4%, respectively, $p>0.05$). However, ERP was found more frequent in males than females in non-febrile group (10.9% VS 1.0%, respectively, $p=0.0036$).

Conclusions: Our study demonstrated a highest prevalence of fever induced BrS ever reported. High leads electrocardiogram increased the sensitivity of fever induced BrS diagnosis. Larger study of prevalence, risk stratification and management of fever induced BrS should be done.

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