To Treat Or Not to Treat ? Risk Assessment of Brugada Syndrome

Zeel Patel, DO[1], Lekha Racharla, DO[2] , Preysi Patel, DO[1], Brian Henstenburg DO[1], Desire Guthier, DO[1], Chun Siu, DO[1], Justin Guthier DO[2]

[1]Department of Internal Medicine, [2]Division of Cardiology, Lehigh Valley Health Network, Allentown, Pennsylvania

Introduction

Syncope is a common presentation for a rare condition called Brugada Syndrome (BrS). An inherited channelopathy that can increase risk of fatal arrhythmias and sudden cardiac death (SCD). ECG shows right bundle branch block (RBBB) morphology and persistent > 2 mm ST elevation in precordial leads V1 to V2. ST elevation morphology can be further classified into BrS Type I showing “coved type” vs “saddle type” in type II.

Case Description

- A 40-year-old male with PMH of pseudo-seizures, recurrent syncope and polysubstance abuse admitted for non-vasovagal syncope after being found unconscious.
- Trauma evaluation negative for intracranial pathologies.
- ECGs revealed J point elevation with saddle type upsloping ST segments in V1-V3, consistent with Type II BrS.
- Troponins were negative.
- Transthoracic echocardiogram showed LVEF of 35% with global hypokinesis.
- Cardiac MRI (gold standard) confirmed normal LVEF without evidence of delayed gadolinium enhancement, ruling out cardiomyopathy.
- Give the paucity of data, risk assessment poses a challenge.
- ESC 2015 guidelines, ICD placement is a Class I indication in BrS Type I.
- Further determined with a provocative challenge with an arrhythmic.

Conclusion

Syncope with underlying BrS is the result of polymorphic ventricular tachycardia or ventricular fibrillation. Treatment of BrS type I includes prevention of SCD with an ICD. However, when not applicable as in our case, avoidance of precipitating factors such as drugs and alcohol use are the mainstays of treatment. Here, we highlight the importance of recognizing BrS to establish appropriate therapy and prevent SCD.

Results

A procainamide challenge was administered, which did not elicit BrS type I, ventricular tachycardia (VT) or widening QRS, therefore ICD therapy was not indicated. Thus, BrS type II with low risk-features was deemed to be the cause of his syncopal episodes and was counselled on avoiding precipitating factors.

References

1. Brugada, Joseph et al. Present Status of Brugada Syndrome: JACC State of the Art Review. Volume 72. issue 9. 28 August 2018, Pages 1046-1059.
2. Priori et al. 2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death. European Heart Journal (2015)36, 2793–2867 doi:10.1093/eurheartj/ehv316.
3. Brugada Joseph. Management of patients with a Brugada ECG pattern. e-Journal of Cardiology Practice. March 2009. Vol 7.
4. Sieria, Juan and Brugada, Pedro. Management of Brugada Syndrome 2016: Should All High-Risk Patients Receive an ICD? Alternatives to Implantable Cardiac Defibrillator Therapy For Brugada Syndrome. Circulation: Arrhythmia and Electrophysiology. American Heart Association. November 2016.
5. Atarashi, H., Ogawa, S., Harumi, K., Hayakawa, H., Sugimoto, T., Okada, R., Murayama, M., & Toyama, J. (1996). Characteristics of patients with right bundle branch block and ST-segment elevation in right precordial leads. Idiopathic Ventricular Fibrillation Investigators. *The American journal of cardiology*, *78*(5), 581–583

Lehigh Valley Health Network

Questions/Concerns?

Please feel free to reach out to me at zeel.patel@lvhn.org

Thank you!