WEATHERING AN ADENOSINE INSENSITIVE RIGHT VENTRICULAR OUTFLOW TRACT VENTRICULAR TACHYCARDIA (ADO INSENSITIVE RVOT VT) STORM IN AN ADOLESCENT FEMALE: A CASE REPORT

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**Introduction**: Ventricular tachycardias (VT) are commonly associated with structural heart disease. However, 10% of VTs have no identifiable cause. RVOT-VT, a small subgroup of idiopathic VTs localized in the right ventricular outflow tract is highly sensitive to adenosine (ADO). Only 11% of RVOT-VT is ADO-insensitive, posing a diagnostic challenge. We present a peculiar case of an ADO-insensitive RVOT-VT storm and the challenges of recognizing and managing it in a resource-limited setting.

**Methods**: A 15-year-old female, asthmatic, complained of palpitations, lightheadedness, chest pain and dyspnea a few hours prior to admission. She had a similar episode a month ago, which necessitated ER admission, electrical cardioversion and amiodarone. On admission, she was tachycardic but normotensive. She had diffuse wheezes. Cardiac exam was normal. ECG revealed a wide complex tachycardia (WCT). Work-up revealed a normal chest x-ray, thyroid function tests and electrolytes. Echocardiogram showed a structurally normal heart. She was managed as a case of viral myocarditis and SVT with aberrancy. Vagal maneuvers and adenosine was given which slowed down the tachycardia. She was then started on IV anti-arrhythmics however, sustained symptomatic VT recurred on the same day. ECG analysis showed a WCT, LBBB, AV dissociation with positive QRS complexes in inferior leads suggestive of VT originating from the RVOT. RVOT-VT storm was considered and adenosine (maximum dose) was given. The patient did not revert to sinus, hence, ADO-insensitive RVOT-VT was considered. Cardioversion terminated the VT storm.

**Result**: She was managed as a case of viral myocarditis and SVT with aberrancy. Vagal maneuvers and adenosine was given which slowed down the tachycardia. She was then started on IV anti-arrhythmics however, sustained symptomatic VT recurred on the same day. ECG analysis showed a WCT, LBBB, AV dissociation with positive QRS complexes in inferior leads suggestive of VT originating from the RVOT. RVOT-VT storm was considered and adenosine (maximum dose) was given. The patient did not revert to sinus, hence, ADO-insensitive RVOT-VT was considered. Cardioversion terminated the VT storm.

**Conclusion**: This case report highlights 2 things. The ECG remains a reliable tool in recognizing and localizing VTs clinically. Secondly, it highlights the importance of prompt recognition of ADO-insensitive RVOT-VT because its management and prognosis is very different from the common causes of VT.