NYC HEALTH+ HOSPITALS | Kings County

Emergency Department Clinical Guidelines

ED/CCT Acute Tachycardia with a Pulse Guidelines

Clinical Context and Purpose

The purpose of this guideline is to provide a clinical pathway for emergency department management of patients presenting with acute narrow or wide tachycardia with a pulse.

Background

Supraventricular tachycardias (SVTs) are a common presentation in the emergency department. SVTs are acute tachydysrhythmias originating at or above the atrioventricular (AV) node and defined typically by a narrow QRS complex (<120 ms) and tachycardia (HR>100 bpm); some patients may present with wide QRS complexes (>120 ms) due to baseline or rate-related aberrant conduction. (While most patients who present with SVT will be hemodynamically stable allowing the emergency provider time to consider various treatments, some patients may present with hemodynamic instability and require emergent intervention, including but not limited to electrical cardioversion.

While regular, narrow complex tachycardias are highly suggestive of SVTs, some patients may present with wide QRS complexes indicating possible SVT with aberrant conduction or the presence of an accessory pathway versus acute ventricular tachydysrhythmias. Important differential diagnoses to consider in the setting of acute regular, narrow complex tachydysrhythmias include but are not limited to: sinus tachycardia, sinus node re-entry tachycardia, ectopic atrial tachycardia, atrial flutter with regular atrioventricular (AV) conduction, atrioventricular nodal re-entry tachycardia (AVNRT), orthodromic atrioventricular re-entry tachycardia (AVRT), and junctional tachycardia (rare); in the setting of aberrant conduction these tachydysrhythmias may present with wide QRS complexes and therefore present as regular, wide complex tachycardias. Important differential diagnoses to consider in the setting of acute regular, wide complex tachydysrhythmias include but are not limited to: monomorphic ventricular tachycardia (VT), SVT with aberrancy or with an accessory pathway/pre-excitation syndrome e.g. antidromic AVRT, toxicity with a sodium-channel blocker, and hyperkalemia.

Important irregular, narrow complex tachycardias to consider include but are not limited to atrial fibrillation, atrial flutter with variable conduction, and multi-focal atrial tachycardia; any of these may present as irregular wide-complex tachycardias in the setting of aberrant conduction. Other important differentials to consider in the setting of irregular, wide-complex tachycardias include but are not limited to atrial fibrillation with ventricular pre-excitation, polymorphic VT with baseline prolonged QTc interval (Torsades de pointes), and polymorphic VT with normal QTc, usually associated with myocardial ischemia.

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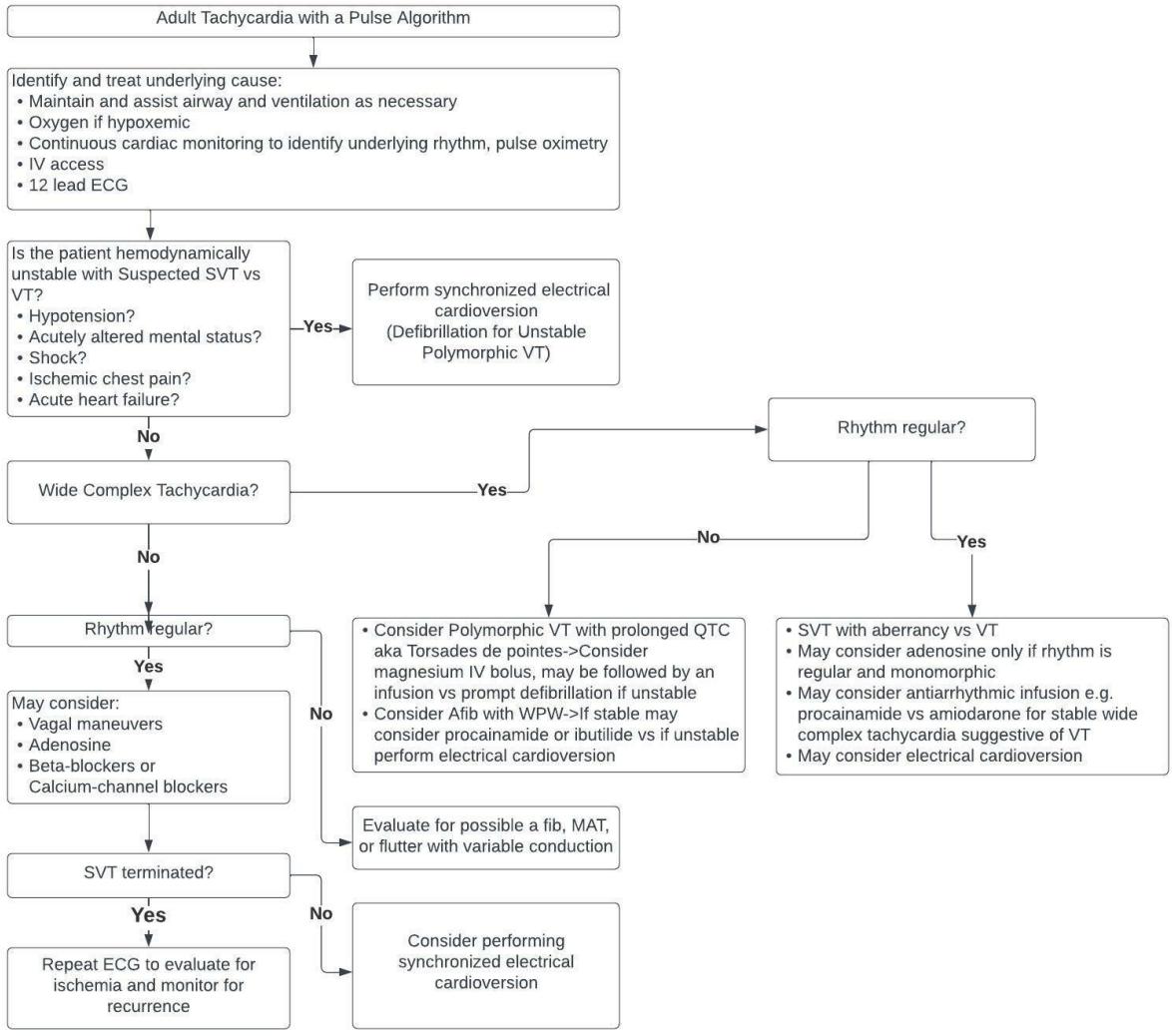

Resources/References

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