PRIMARY CAUSES OF VENTRICULAR TACHYCARDIA


Take home points:
1. DKA and HHS (hyperosmotic hyperglycemic state) are part of a continuum
2. Ketosis can occur in both DKA and HHS; anion-gap acidosis differentiates the two (DKA = marked acidosis)
3. DKA – insulin is the primary treatment; HHS – fluids is the primary treatment
4. Use the Hospitalist Handbook and other guidelines to manage these patients (better outcomes)

Other Pearls:
- The preferred term for hyperosmolar non-ketotic coma (HONK) is now hyperglycemic hyperosmolar state (HHS) which underscores the fact that these patients don’t have to present with coma – they can present with AMS or focal neurologic signs
- DKA patients can be really sick but if you follow the guidelines for DKA, they usually do pretty well. The HHS patients are the ones with high mortality – the ones that you really have to worry about
- Remember to uncover precipitating factors – the 6 I’s – Infection, Infarction, Iatrogenic (drugs), Incision (post-op), Intoxication, Insulin (lack of)
- DKA can occur in patients who aren’t on insulin (especially young African-Americans – a subset of obese diabetics that have episodes of DKA with acute illness but then resolve and don’t need insulin anymore – a.k.a. “Flatbush” diabetes.
- Serum and urine ketones only measure acetone and acetoacetone and not beta-hydroxybutyrate (the predominant ketone in DKA). As acidosis corrects, the beta-hydroxybutyrate (thru redox rxn) get converted to acetone and acetoacetate (therefore ketones can paradoxically go up!).
CLUES TO THE CAUSE OF PRIMARY VT/VF:

Before using the algorithm below, make sure you rule out secondary VT/VF:

- Echocardiogram for structural heart disease
- Cardiac catheterization for coronary artery disease
- Electrolytes (K, Ca, Mg)
- Medications
- Toxicology screen (cocaine, amphetamines)

Is the rhythm VT or VF?

- VT
- VF

Is the rhythm Torsades?

- YES
- NO

Diagnosis cannot be determined from ECG at this time

Differential diagnosis:
1. LQTS
2. Idiopathic

Is it polymorphic VT or monomorphic VT?

- NO
- POLY
- MONO

ECG during VT shows LBBB with inferior axis

Differential diagnosis:
1. RVOT-VT
2. ARVD

Is the rhythm Torsades?

- YES
- NO

Differential diagnosis:
1. Catecholaminergic VT
2. Brugada syndrome
3. ARVD