

AEROMED OUTREACH

MAY 2017

INSIDE THIS ISSUE:

FDOT PUBLIC SAFETY ANNOUNCEMENT 1

MAY MENTAL HEALTH AWARENESS MONTH 1

PHYSICIAN'S ARTICLE 1

PHYSICIAN'S ARTICLE CONT 2

UPCOMING OUTREACH ACTIVITIES

- **Aeromed Community Education Session July 6th at 0900. Contact Jennifer Mefford at jmefford@tgh.org for more information.**

FDOT PUBLIC SAFETY ANNOUNCEMENT

Aeromed participated in Florida Department of Transportation State Bicycle/Pedestrian Safety public safety announcement. The

public safety announcement is a collaborative effort among agencies to drive down fatalities and won't stop until we reach zero.



MAY MENTAL HEALTH AWARENESS MONTH

Aeromed recently participated Tampa General Hospital's There is NO Health Without Mental Health with Marty the Mental Health Bear during May mental health awareness month.

Marty circulated throughout the hospital to spread the message about the importance of mental health.



PHYSICIAN ARTICLE

Scenario:

You arrive on the scene of a 72 year-old female complaining of shortness of breath. The patient states that she has not been feeling well for the past 5 days, has not left the house and has missed her medical appointments. You examine the patient and note crackles in both lung bases. The vital signs are as follows: HR 100, BP 140/76, RR 28, SpO2 98%. You obtain an EKG and note

a wide-complex, regular tachycardia with rate 100 (see figure). You and your partner collectively decide that the patient has ventricular tachycardia (VT). You administer amiodarone 150 mg IV hoping to terminate this dysrhythmia. Shortly after administration of amiodarone, you note that you have achieved your goal of terminating this dysrhythmia. Unfortunately, you terminated the dysrhythmia into asysto-

le. What happened?

Looking back in the clinical vignette, we see that the patient has missed her medical appointments for the past week because she hasn't been feeling well. The medical appointments that the patient missed were her hemodialysis sessions. This patient is fluid overloaded and has severe hyperkalemia as a result of missing hemodialysis. Unfortunately, the EKG in this case was

PHYSICIAN'S ARTICLE CONTINUED

mistaken for VT. Severe hyperkalemia is known to poison the sodium channels. Recall that Class I antiarrhythmics (lidocaine and procainamide) work as sodium channel blockers. Additionally, amiodarone, which is primarily a Class III antiarrhythmic, has Class I properties as well. The use of medications with Class I effects in the setting of severe hyperkalemia can cause such pronounced sodium-channel blockade that asystole may occur.

Common teaching in emergency medicine is that when we see a wide-complex, regular tachycardia we should think VT and manage as such. The problem here is that this rate is only about 100 beats/minute. Ventricular tachycardia should not be diagnosed in patients with a HR <120-130. In this case, a HR of ~100 helps to exclude the diagnosis of VT. Keep in mind, there are a few conditions that are well known to mimic VT. These conditions include severe hyperkale-

mia, sodium-channel blocker toxicity and reperfusion dysrhythmias.

In a previous article I discussed the need for extreme caution when using AV node blocking medications in the setting of atrial fibrillation with rapid ventricular response (A-fib RVR). Specifically, one must ensure that A-fib with WPW is not present. The same is true in the clinical scenario presented here. This patient was hemodynamically normal (BP 140/76, HR 100, normal mentation, etc.). There was no emergency present that warranted administration of antiarrhythmic medication until more information with able to be gathered (i.e., serum potassium level). Should the patient have become hemodynamically abnormal the patient could have easily undergone synchronized electrical cardioversion. Instead, a medication was administered that caused asystole. First, we must do no harm. My personal

practice when presented with stable VT (wide-complex tachycardia, rate >120-130) is to take a step back. Obtain a serum potassium level and assure that the patient remains stable. Should instability occur, the patient will undergo cardioversion. Should the potassium be normal and the patient determined to be in VT, I will then consider an antiarrhythmic medication.

Patient safety is priority number one. As EMS develops as a specialty and we are given new tools and medications, we must ensure patient safety remains the first priority. Again, it is not my intention to imply that EMS providers not administer medications and provide

life-saving intervention. It is my intention to pass on information that should be considered when treating these complex patients. Sometimes in medicine the hardest thing for us to do is step back and do nothing.

Marshall A. Frank,
DO, MPH, FACEP, EMT-P
Medical Director,
Tampa General Hospital,
Aeromed
Affiliate Assistant Professor,
Department of Emergency Medicine
University of South Florida
TEAMHealth/
Tampa General Hospital

