

District III EMS Quality & Improvement “Case of the Month”

Welcome to the new bi-monthly quality and improvement newsletter for our district EMS services. Interesting cases will be presented here for our education. Thanks for all of your great work. If you have a case that you believe contains teaching points, or you want reviewed, please place it in the “QI” book in the radio room so we can pull it for future editions of this newsletter. Any questions, feel free to contact me at Daniel.Wolfson@vtmednet.org

Chief Complaint: 72 year old male with difficulty breathing

Pre-hospital course: EMS arrived to find a male patient in his home. The pt had been diagnosed with bronchitis one week ago with worsening symptoms over the last few days. Pt was noted to have “bruising in his sides from coughing so hard”. Pt was seen by his doctor one week ago and told that if he was not improving he should go to the hospital.

PMHX: Low blood pressure, CHF, Pacer/AICD, CABGx3

Meds: Amiodarone, lasix, hytrin, doxepin, potassium chloride, zaroxolyn.

Pre-Hospital Course:

1700 hours: A BLS/ALS crew arrived to find a white male A&OX3, in no acute distress. Vital signs were: Pulse 73, BP 73/40, RR 20, O2Sat 93% on RA. The pt was placed on a NRB at 10L/m and the cardiac monitor, which showed a variable heart rate of 70-220. He was noted to have clear lung fields, a GCS of 15, and pale skin. The pt was transported to the FAHC ED. En-route additional vital signs were recorded.

1710 hours: Pulse 72, BP 77/46, RR 20. Lung sounds noted to be congested.

1720 hours: Pulse 74, BP 87/31, RR 20. Pt noted to have edema in extremities. Radio room documentation at 1720 hours: Male pt with bronchitis for 1 week, BP 73/46, HR 73, RR 20, Skin warm and dry, PERRL, not getting better, bruising on sides, 2+ edema, pacemaker, cardiac NSR.

Emergency Department Course:

The pt arrived in the ED at 1740 hours with a BP 82/26, HR 78, RR 14, and oxygen saturation of 87-96% on NRB. Peripheral IV access was established, an EKG was obtained that showed an accelerated junctional rhythm at 77 and a

right bundle branch block, labs and cultures were drawn, and a portable CXR that showed cardiomegaly and mild pulmonary edema was obtained.

The pt was fluid resuscitated with 2 liters of normal saline. The pt became increasingly hypotensive, dropping his BP to 69/21. A central line was placed and a levophed infusion was started for blood pressure support. Additional history was obtained from the pt including symptoms of increasing cough and shortness of breath over the last several days. The pt had recently completed a course of oral antibiotics for bronchitis. A history of prior alcohol abuse (last drink two years ago), cirrhosis of the liver, GERD, and increasing falls at home was also obtained. Given the history of recent treatment with antibiotics for bronchitis, and worsening cough and hypotension, the patient was presumed to be septic and IV antibiotics were given. The pt was admitted to the ICU with a diagnosis of presumed sepsis, profound hypotension, and CHF.

ICU Course:

After stabilization in the Emergency Department, the pt was transferred to the ICU. Labs returned notable for normal cardiac enzymes, a normal blood gas, a mildly elevated WBC, mild anemia, normal electrolytes, and elevated liver function tests consistent with hepatic failure. Blood cultures returned as negative and it was thought that the cause of the patient's hypodynamic state was likely the hepatic failure in conjunction with the patient's severe underlying heart disease and depressed left ventricular function. A Swan-Ganz catheter was placed in the ICU to aid in the management of this pt with hypotension and congestive heart failure. The pt was weaned off the levophed, and attempts were made to initiate a dobutamine infusion to support cardiac output with diuresis to improve the CHF, but this failed secondary to increasing hypotension. After a long discussion with the family it was decided to pursue comfort measures only. The AICD was turned off, and the pt was placed on a morphine drip and expired two weeks after initial admission.

Take Home Message: A patient with profound hypotension needs immediate IV access and aggressive fluid resuscitation.

Quality Improvement:

This 72 year old male was hypotensive at the scene upon EMS arrival, with an initial BP of 73/40. Peripheral IV access should have been immediately established and the patient should have been fluid resuscitated in an attempt to correct the hypotension. The fact that the patient has a history of CHF is not a contraindication to fluid resuscitation. Better communication could have occurred between the radio room, ED physician and EMS crew, to facilitate the initiation of IV placement and fluid bolus.