



Hospital Peer Alert

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Hospital Peer Review is a monthly newsletter sponsored by the Rural Healthcare Quality Network to alert Critical Access Hospitals regarding findings from the Peer Review Program. Summarized are a few of the key findings and best practices that would be helpful for other critical access hospitals to be knowledgeable about. This newsletter is edited by Myron Bloom, Medical Director and he can be reached at drmbloom@msn.com.

The pendulum swings back on Beta Blockade in STEMI ACS

Beta blockers have been promoted for cardioprotection in ACS, but questions about the safety of early IV beta blockers, particularly in high-risk populations, have been raised by the COMMIT-CCS 2 trial. The COMMIT/CCS-2 (Clopidogrel and Metoprolol in Myocardial Infarction Trial/Second Chinese Cardiac Study) randomized 45,852 patients within 24 hours of onset of suspected MI to receive either metoprolol or placebo. Metoprolol was administered as 3 doses of 5 mg IV each in the first 15 minutes, then 50 mg of metoprolol orally and repeated every 6 hours (200 mg daily). Metoprolol resulted in 5 fewer episodes of reinfarction and 5 fewer episodes of ventricular defibrillation, but 11 more episodes of cardiogenic shock for every 1000 patients treated. While the excess of cardiogenic shock occurred mainly in the first day of hospitalization, the reductions in reinfarction and ventricular fibrillation came during and after Day 2. So beta blockers were potentially harmful early and proven beneficial later.

Metoprolol resulted in an average relative increase of cardiogenic shock of 30%, with higher rates for those greater than 70 years of age, or with systolic blood pressure less than 120 mm Hg, or with presenting heart rate greater than 110 bpm, or with Killip class 2 or higher heart failure. The revised beta-blocker recommendations for STEMI are to reserve IV beta-blocker therapy on Days 0 to 1 of hospitalization to when hypertension is present and the patient is not at an increased risk of cardiogenic shock.

Increased risk of low-output state and cardiogenic shock:

- Age greater than 70
- Systolic BP less than 120mm Hg
- Sinus rate greater than 110 (or less than 60)
- Q waves or poor R wave progression across the precordium

Contraindications:

- PR interval greater than 0.24 seconds (1st degree block)
- Second or third degree heart block
- Active asthma and reactive airway disease

So, what does this all this mean. Be more cautious with beta blockers. If the patient is tachycardic or has a low blood pressure ask yourself why. It is recommended that patients with unexplained sinus tachycardia or atrial fibrillation have left ventricular function evaluated before administration of IV beta blockers (or other negative inotropes, such as non-dihydropyridine calcium channel blockers). Attempt to control hypertension by nitrates alone, benzos for anxiety, and opiates and nitrates for pain. Use beta-blockers for tachyarrhythmia or hypertension with tachycardia, especially if ongoing chest pain to reduce cardiac oxygen demand. After day one, when a reduction in reinfarction and ventricular fibrillation has been shown, administration of up to 200 mg of controlled-release daily oral metoprolol appears to be safe in hemodynamically stable patients. Patients with contraindications to early beta-blocker within the first 24 hours of a STEMI should be reevaluated for the use of beta-blockers as secondary prevention, and those patients with moderate to severe left ventricular dysfunction should receive beta-blocker therapy as secondary prevention with a gradual titration scheme.

By the way, the beta blocker CMS Core measure is use in the first 24 hours (not first hours); and the ACC/ AHA recommendations say non-aspirin NSAIDs should be withheld in ACS.