



'Whoville' – Happy Birthday Dr. Seuss!

## PIC QUESTION OF THE WEEK: 3/02/09

Q: What is the appropriate dose of enoxaparin for the treatment of deep vein thrombosis in an obese patient?

A: Enoxaparin (Lovenox) is a low-molecular-weight heparin administered subcutaneously for the prevention and treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE). It is also used in patients with unstable angina as well as those with myocardial infarction, regardless of the presence of ST-segment elevation. The adult dose of enoxaparin for treatment of acute DVT is 1 mg/kg every 12 hours or 1.5 mg/kg every 24 hours. For prophylaxis, recommended dosage is 30 mg twice daily or 40 mg once daily. There is, however, debate regarding dosing in special populations, especially those who are obese. Patients in excess of 150 kg were seldom included in clinical trials and there is virtually no data available on dosing the drug in the morbidly obese weighing over 180-190 kg. There have been several studies in this patient population that support maintaining normal dosage guidelines, while others indicate a need for dosage modification. Enoxaparin only distributes into the vascular compartment, thus dosing by total body weight would appear to be excessive in obese patients. This has, however, not been seen in practice. The current guidelines published by the American College of Chest Physicians recommend using weight-based dosing in obese patients for both *prophylaxis* and *treatment* of acute DVT. Some have suggested a *prophylactic* dose of 0.5 mg/kg twice daily while others continue to recommend only modest adjustments to standard prophylactic dosage regimens, for example, 40 mg twice daily. Current dosing guidelines for *treatment* of acute DVT in morbidly obese patients, including those in excess of 150 kg or a body mass index (BMI) greater than 40 kg/m<sup>2</sup>, are based on actual body weight. In studies that included very obese patients, a dose of 1mg/kg was effective in reaching target anti-Xa levels with minimal adverse effects. For problematic patients, it is advisable to periodically monitor serum anti-Xa levels and adjust doses accordingly. Although this issue has been debated for some time, the current guideline of 1 mg/kg twice daily or 1.5 mg/kg daily still appears optimal for the treatment of acute thrombotic episodes.

### References:

- Antithrombotic and Thrombolytic Therapy: American College of Chest Physicians Evidenced-Based Clinical Practice Guidelines (8th edition). CHEST 2008;133(6S):148-9S,401-2S.
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