



Sun Life Stadium, Miami, FL - Home of Super Bowl XLIV

PIC QUESTION OF THE WEEK: 02/08/10

Q: What options are available for the prevention and treatment of altitude sickness?

A: With the increasing popularity of travel to regions of higher elevation, altitude sickness has become a more recognized health condition. It is most prevalent in travelers ascending to heights greater than 11,500 feet. At these altitudes, oxygen levels are greatly decreased and hypoxia is a major concern. Rapid ascension may also contribute to this condition. With adequate time, the body can acclimate to lower oxygen levels. There are three types of altitude sickness designated as acute mountain sickness (AMS), high-altitude cerebral edema (HACE), and high-altitude pulmonary edema (HAPE). AMS is the most common form of altitude sickness and affects approximately one in four individuals climbing to heights greater than 8,000 feet. Symptoms include headache, anorexia, fatigue, weakness, nausea, vomiting, dizziness, and difficulty sleeping. The onset of AMS is generally within six to twelve hours of arrival at the higher elevation. Symptoms are usually self-limited and subside within one to three days. HACE and HAPE are relatively uncommon and occur more often in patients with a genetic predisposition or underlying cardiac risk factors. HACE is a progression of AMS and characterized by lethargy, drowsiness, confusion, and ataxia. HAPE is a life-threatening condition that presents with symptoms of increased breathlessness, weakness, and cough. Altitude sickness can best be prevented by climbing at a proper speed. Current guidelines recommend that travelers not increase the elevation at which they sleep by more than 1,000 to 1,600 ft/day after they reach an elevation of 6,500 feet. Resting every three to four days may eliminate the need for prophylactic medications. Non-pharmacologic options for avoiding illness include remaining at approximately the same altitude or descending to a lower elevation. Acetazolamide, a carbonic anhydrase inhibitor, is the only drug labeled for both the prophylaxis and treatment of AMS. Although dosages vary, the labeled dose is 250 mg two to four times per day beginning one day before ascent and continuing for two days after reaching maximum altitude. Continued treatment is dependent on patient response. Dexamethasone (4 mg every 6-12 hours) can be used in patients who cannot tolerate acetazolamide. Acetazolamide is the preferred agent for AMS as it assists in both acclimatization and symptomatic relief while dexamethasone only provides symptomatic relief and can produce a variety of adverse effects. Medications, such as nifedipine, tadalafil, sildenafil, and salmeterol, have also been beneficial for the prevention of HAPE. Altitude sickness can be easily prevented using a variety of pharmacologic and non-pharmacologic measures.

References:

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(Accessed February 3, 2010)

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The PIC Question of the Week is a publication of the Pharmaceutical Information Center, Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA 15282 (412.396.4600).