

News

Office of Medical Information
The University of Texas Southwestern Medical Center at Dallas
5323 Harry Hines Boulevard Dallas, Texas 75235-9060 214/688-3404

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CONTACT: John Quinn
Office: 214/688-3404
Home: 214/790-4238
Fax: 214/688-8252

****Acute mountain sickness "cure" could be harmful

DALLAS -- For many, the thrill of climbing a mountain can end abruptly with the onset of headache, nausea, weakness and shortness of breath-- symptoms of acute mountain sickness. Evidence published by a researcher at The University of Texas Southwestern Medical Center at Dallas demonstrates that a popular drug treatment used for acute mountain sickness must be used cautiously, or it can do more harm than good.

Dr. Ben Levine, assistant professor of internal medicine and medical director of cardiac rehabilitation, said that he and associates determined that Dexamethasone, often used to prevent and treat the illness, is not as effective a remedy as previously thought.

Levine said that the drug appears only to mask mountain sickness symptoms. "It could be referred to as a bridge to a cure, but not a cure itself," he said. "It can be used in conjunction with descent to ease the victim's discomfort and facilitate evacuation efforts."

Acute mountain sickness occurs in people who climb "too high, too fast," Levine said. It can occur above 8,000- to 10,000-foot elevations. Although not everyone is affected by symptoms of the illness, he noted that climbers have taken the drug prophylactically. "Any drug is potentially harmful if used without a need," he said. Dexamethasone, a potent synthetic steroid, also is used to reduce nausea in chemotherapy patients.

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The researchers tested the drug's effect through imaging studies on the cerebral systems of volunteers who performed their "ascents" in a hypobaric chamber. Altitude changes were simulated by decreasing the pressure in the chamber, and tests were conducted to monitor symptom development.

Mountain sickness may cause swelling of the brain tissue, or cerebral edema, leading to headaches, the most common symptom of the condition. Levine and his associates' study, published in the Dec. 21, 1989, issue of The New England Journal of Medicine, revealed that even though the "climbers" reported that the headache and other symptoms ceased after the administration of Dexamethasone, diagnostic imaging still showed cerebral edema.

"This is where use of the drug becomes dangerous," Levine said. "Once the climber feels better, he or she assumes it's OK to continue the climb." He said the swelling could become lethal if not stopped. "The primary remedy for mountain sickness is descent. It's the cornerstone of treatment."

A past member of the Himalayan Rescue Association, Levine said that people who fly into the mountainous region before beginning their climb are more likely to suffer from mountain sickness than those who hike into the area.

The climber's adage "climb high, sleep low" seems applicable when dealing with mountain sickness. Levine said most climbers suffer very mild symptoms of the illness, but if precautions are taken during the climb, the body will acclimatize to the altitude change. He recommended ascents of 1,000 feet per day in sleeping altitude as a good rule above 10,000 feet.

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"Individual climbers have very different hypoxic drives, which are responsible for stimulating ventilation when the environmental oxygen is low," Levine said. "A brisk hypoxic drive improves altitude tolerance and may protect against mountain sickness."

One unusual aspect of mountain sickness is that highly trained athletes are not protected from the illness and may have more severe symptoms than those who are just "in shape." Levine said that the hypoxic drive seems to be blunted in the athlete. But he stressed that following precautions during ascent will reduce the severity of symptoms in all cases.

Levine and colleagues have been studying the effectiveness of other drugs in tests at Mount McKinley, Alaska. A promising one may actually facilitate acclimatization for climbers by altering the acid-base balance of the blood and improving oxygenation.

Collaborating with Levine on the Dexamethasone study, which was funded in part by the Henry Luce Foundation, were Drs. Kazuhiko Yoshimura, Toshio Kobayashi, Masao Fukushima, Toshishige Shibamoto and Gou Veda of Shinshu University School of Medicine, Matsumoto, Japan.

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NOTE: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and Southwestern Allied Health Sciences School.