Predicting Acute Mountain Sickness Susceptibility in Jade Mountain Climbers by Oxygen Saturation at Mountain Entrance and Sea-level

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Objective: To examine acute mountain sickness (AMS) in Jade mountain climbers using oxygen saturation (SpO_2) at different altitudes.

Methods: Twenty-six climbers (12 female, 14 male) aged 29 to 70 years (mean 45.88±9.7) were enrolled. All lived below 1 km. AMS was diagnosed using the Lake Louise Consensus. A climber with at least one high altitude symptom was defined as having high altitude syndrome (HAS). Levels of SpO_2 and answers to AMS questionnaires were recorded at different altitudes.

Results: The most common high altitude symptom was insomnia, then headache and nausea. The HAS and AMS prevalence rates were 80.8% and 34.6%, respectively. The average SpO_2 level at Jade Mountain peak was 84.19±5.39%. The lower the SpO_2 level at the entrance of Jade Mountain (2659 m), the higher the Lake Louise AMS score (LLAMSS) (r=-0.215, P=0.047). The greater decline in SpO_2 level between the entrance of Jade Mountain and sea-level, the greater the risk of HAS (× 1.8) and AMS (× 2.0).

Conclusions: A large decline in SpO_2 level between the entrance of Jade Mountain and sea-level positively correlated with the incidence rates for HAS and AMS.

Key words: acute mountain sickness, oxygen saturation, Jade Mountain, high altitude syndrome

Received: April 28, 2005 Accepted for publication: November 28, 2005

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