

A comparison of lowest effective dose (62.5 mg vs 125 mg) of acetazolamide for acute mountain sickness: a meta-analysis

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Introduction

Acetazolamide is the recommended medication for the chemoprophylactic prevention of Acute Mountain Sickness (AMS). Acetazolamide is believed to speed up acclimatization primarily via enhancing ventilation through acidotic activation of the chemoreceptors in the brain. Acetazolamide has been shown to be efficient for AMS in dosages starting at 125 mg to 375 mg dosage twice daily. Over the past few decades, there have been repeated recommendations to reduce the dose of acetazolamide, often to lessen side effects such as headache, nausea, polyuria, and dysgeusia as well as to prevent misdiagnoses and unnecessary treatments.

Objective

To compare the effectiveness of Acetazolamide (62.5 mg vs 125 mg twice daily) for the prevention of AMS.

Method

PubMed, Embase, Google Scholar, and reference lists were searched for clinical trials if they compared two dosages (62.5 mg vs 125 mg twice daily) of Acetazolamide for AMS. The extracted data were used to calculate the pooled odds ratios with a 95% confidence interval using the Mantel-Haenszel fixed-effects model while heterogeneity was calculated using I² statistics. The quality of included trials was assessed using the Cochrane Collaboration tool.

Result

Two clinical trials included a total of 179 AMS patients (the 62.5 mg group [93 patients] and the 125mg group [86 patients]). Patients in the 62.5 mg group had a higher risk of AMS than patients in the 125mg group but were statistically non-significant. (OR: 1.16, 95%CI: 0.64-2.09, p=0.62, I²=0%). The side effects were similar between the two groups in both trials.

Conclusion

Based on the analysis, 62.5 mg of acetazolamide twice daily is non-inferior to the recommended dose of 125mg twice daily for the prevention of AMS. Further studies are needed along with placebo based on patients' characteristics and degree of prior acclimatization with the uniform endpoint altitude.

Keywords:

Acetazolamide, Acute Mountain Sickness, Meta-analysis