SNOW BLINDNESS - A THREAT TO MOUNTAINEERS : A REVIEW ARTICLE

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Introduction

Photokeratitis, colloquially known as snow blindness, is an acute inflammatory condition of the cornea caused by excessive exposure to ultraviolet (UV) radiation. This review examines the underlying mechanisms of photokeratitis, its characteristic clinical presentation, and evidence-based preventative strategies. UV radiation poses a significant risk to ocular health. Photokeratitis results from the overexposure of the corneal epithelium to UV-A and UV-B radiation, leading to cellular damage and inflammation (Henry et al 2012). This condition is particularly prevalent in environments with high UV reflectivity, such as snow-covered terrains, hence the term "snow blindness" (Daniel et al 2024).

Aim

The article aims to detail the pathophysiology, clinical features, and effective preventative measures against photokeratitis.

Methodology

This review was conducted by systematically analyzing existing literature on Snow blindness.

Result & Discussion

Behrens et al in 2001, in his study observed that UV radiation induces photochemical reactions within the corneal epithelium, leading to cellular damage. This damage involves the disruption of cellular membranes and the generation of reactive oxygen species (ROS), which contribute to inflammation. The corneal epithelium, rich in nerve endings, becomes highly sensitized, resulting in the characteristic pain associated with photokeratitis. Dartt in 2009, revealed that the damaged corneal cells release inflammatory mediators, such as prostaglandins and cytokines, exacerbating the inflammatory response. This inflammatory cascade leads to corneal edema, epithelial cell shedding, and increased sensitivity to light.

Symptoms typically manifest several hours after UV exposure, often with a latency period of 6-12 hours. Characteristic symptoms include: Severe ocular pain, Photophobia, Tearing, Redness, Blurred vision, A sensation of a foreign body in the eye. Examination may reveal: Punctate epithelial erosions, Corneal edema, Conjunctival injection.

Conclusion

Photokeratitis is a painful yet preventable condition. By understanding the underlying mechanisms and implementing effective preventative strategies, individuals can minimize their risk of ocular UV damage.

Key words :- Snow blindness, photokeratitis, UV protection.