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In Hypertension

High Altitude Systemic Hypertension (HASH)

High Altitude Systemic Hypertension (HASH) is a common high altitude (HA) illness but unfortunately the least researched topic. High altitude is defined as an elevation of 2700 m above sea level. HASH is defined as sustained hypertension (> 150/90 mm Hg) in low landers at high altitude. High altitude tourism is gaining popularity and in addition to the army deployed at high altitude who face chronic hypoxia, the tourist is faced with acute hypoxia. HSAH is encountered both in the acclimatized as well as the un acclimatized persons with a prevalence ranging from 37 to 62.4%.

The pathophysiology is multifactorial and complex with an interplay of sympathetic activation, endothelial activation and hormonal imbalance. The cardiovascular and hormonal changes that occur on acute exposure are different from those occurring at sustained exposure.

HASH is diagnosed based on JNC criteria for HTN in a low lander who has been residing continuously for more than 3 months at high altitude. Whether highlanders with HTN should be labelled as HASH or not is a debatable topic. The guidelines and criteria are evolving, and different studies have considered varied definitions.

Descent to a lower altitude reduces the BP in majority of the patients. On re ascent, they often become hypertensive again. ACEI and CCB are the preferred drugs for treatment. Further evidence is required to clearly distinguish raised BP which is a physiological acclimatization at high altitude versus sustained HTN leading to end organ damage. HASH may subsequently be proved to be an extended spectrum of the physiological response to hypobaric hypoxia at high altitude.

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