



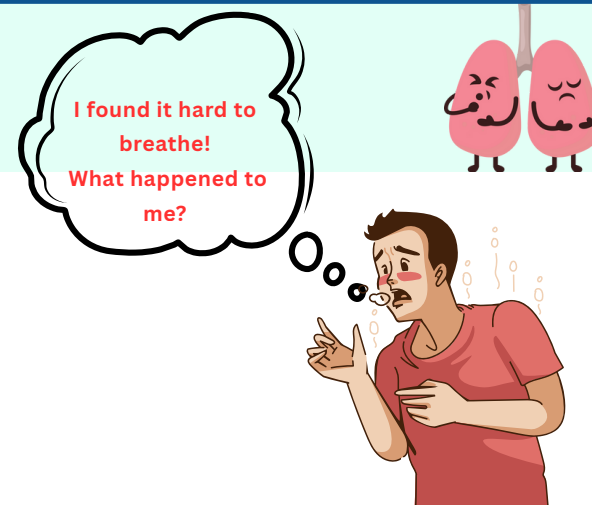
TRAVEL HEALTH DOC

AWARENESS POSTER ON HAPE



HAPE

HAPE (High Altitude Pulmonary Edema) is a serious and life-threatening condition in which the body cannot adapt to the lack of oxygen during rapid ascent to altitude, causing fluid to leak from the blood vessels of the lungs and accumulate in the lungs. Rapid ascent to altitude → Decreased oxygen levels (Hypoxia) → Pulmonary vasoconstriction → Increased pulmonary pressure → Fluid leakage into alveoli → Pulmonary edema → Impaired oxygen exchange → Shortness of breath, fatigue, cough, blueness → If not treated promptly → Life-threatening condition



SYMPTOMS

- 
Persistent cough (dry, frothy or blood tinged)
- 
Difficulty breathing even at rest
- 
Chest feeling heavy
- 
Rapid breathing, increased heart beat
- 
Blue appearance of the body (cyanosis)
- 
Fatigue – getting tired more quickly than usual

WHAT HAS HAPPENED TO ME?

- "Came to Upper Mustang from Kathmandu in a reserved Scorpio within 2 days."
- The first day at Upper Mustang was fine,
- But the cough started on the second night.
- Today is the third day, I have difficulty breathing even at rest, my chest feels heavy and have slight chest pain, and I have even seen a little blood in my sputum!
- What happened to me?

"Be careful! You can have HAPE!"

PREVENTIVE MEASURES

- 
When climbing above 2500 meters, do not climb more than 500 meters per day.
- 
Take a complete day rest on every 3-4th day of trek.
- 
Drink plenty of water & take plenty of nutritious food
- 
Do not ascend if you start to feel uncomfortable or if you start to experience the above symptoms.
- 
If there is a history of previous HAPE — Nifedipine 30mg can be taken as a prophylactic as advised.

TREATMENT FOR HAPE



Descend down with the help of a friend- descend, descend, descend

Go to the nearest health post or hospital for treatment, where medicines like Oxygen and Nifedipine are available.



Use of Nifedipine (20mg every 6 hours) can produce you a miraculous improvement

Use a Hyperbaric Chamber (Gamow bag) if available.



Plenty of water & nutritious food, enough rest, maintenance of $SpO_2 \geq 90\%$, and constant monitoring by healthcare professionals are quite essential for symptom improvement

Dr. Ranjeet Ghimire



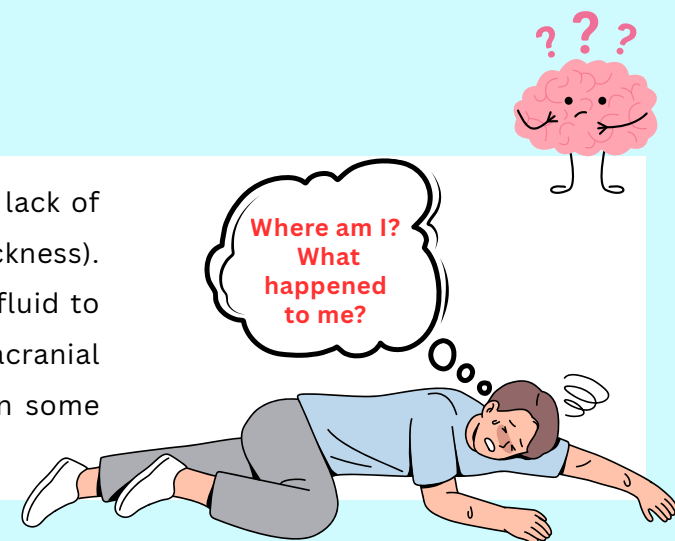
TRAVEL HEALTH DOC

AWARENESS POSTER ON HACE



HACE

HACE (High Altitude Cerebral Edema) is a serious condition in which the brain swells due to lack of oxygen during rapid ascent to altitude. It is the final and fatal form of AMS (Acute Mountain Sickness). The lack of oxygen causes the blood vessels in the brain to swell (Vasodilatation) → causing fluid to leak into the brain → brain/cerebral swelling → increased pressure in the brain (Raised Intracranial Pressure) → eventually leading to loss of consciousness, altered sensorium to coma → and in some cases, death.



SYMPTOMS

- 
Headache
- 
Ataxia (inability to walk in a straight line)
- 
Losing memory, confusion
- 
Slurred Speech
- 
loss of consciousness
- 
coma or even death

WHAT HAS HAPPENED TO ME?

- "Yesterday, while climbing towards Annapurna Base Camp, I had a slight headache and vomited twice – I climbed higher and reached ABC through horse ride thinking, 'I can take a easy ride rather and I have nothing to worry about?'
- But since today, my speech has been slurred, I feel like I am under alcohol influence, I can't even walk properly, I'm forgetting my friend's name too and I feel like I'm going to faint!"
- What has happened to me?

Be careful – you can have HACE!"

PREVENTIVE MEASURES

- 
When climbing above 2500 meters, do not climb more than 500 meters per day.
- 
Do not consume alcohol or sleeping pills.
- 
Drink plenty of water, eat plenty of nutritious food
- 
Do not ascend if you start to feel uncomfortable or if you start to experience the above symptoms.
- 
Those with a history of HACE and those at risk should use Acetazolamide or Dexamethasone prophylactically as recommended by a doctor.

TREATMENT FOR HAPE



Descend down with the help of a friend- descend, descend, descend

Go to the nearest health post or hospital for treatment, where medications such as Oxygen, Acetazolamide, and Dexamethasone are available.



Take Dexamethasone 8mg immediately IV/IM and 4mg every 6 hours which produces you a miraculous improvement.

Use a Hyperbaric Chamber (Gamow bag) if available.



Plenty of water & nutritious food, enough rest, maintenance of $SpO_2 \geq 90\%$, and constant monitoring by healthcare professionals are quite essential for symptom improvement

Dr. Ranjeet Ghimire



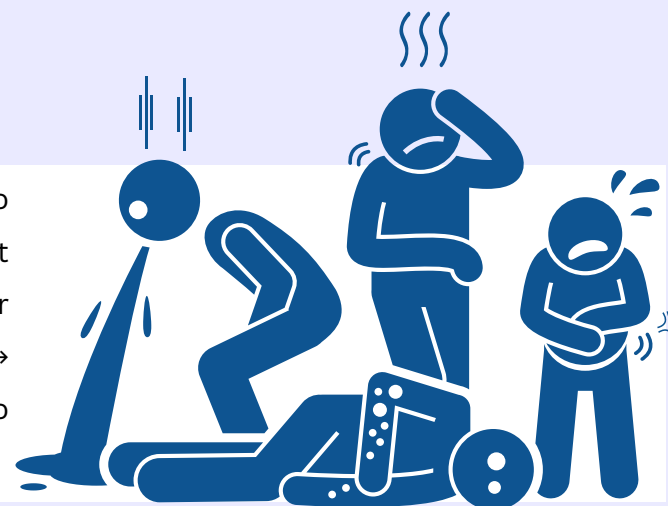
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AWARENESS POSTER ON HAPE



ALTITUDE SICKNESS

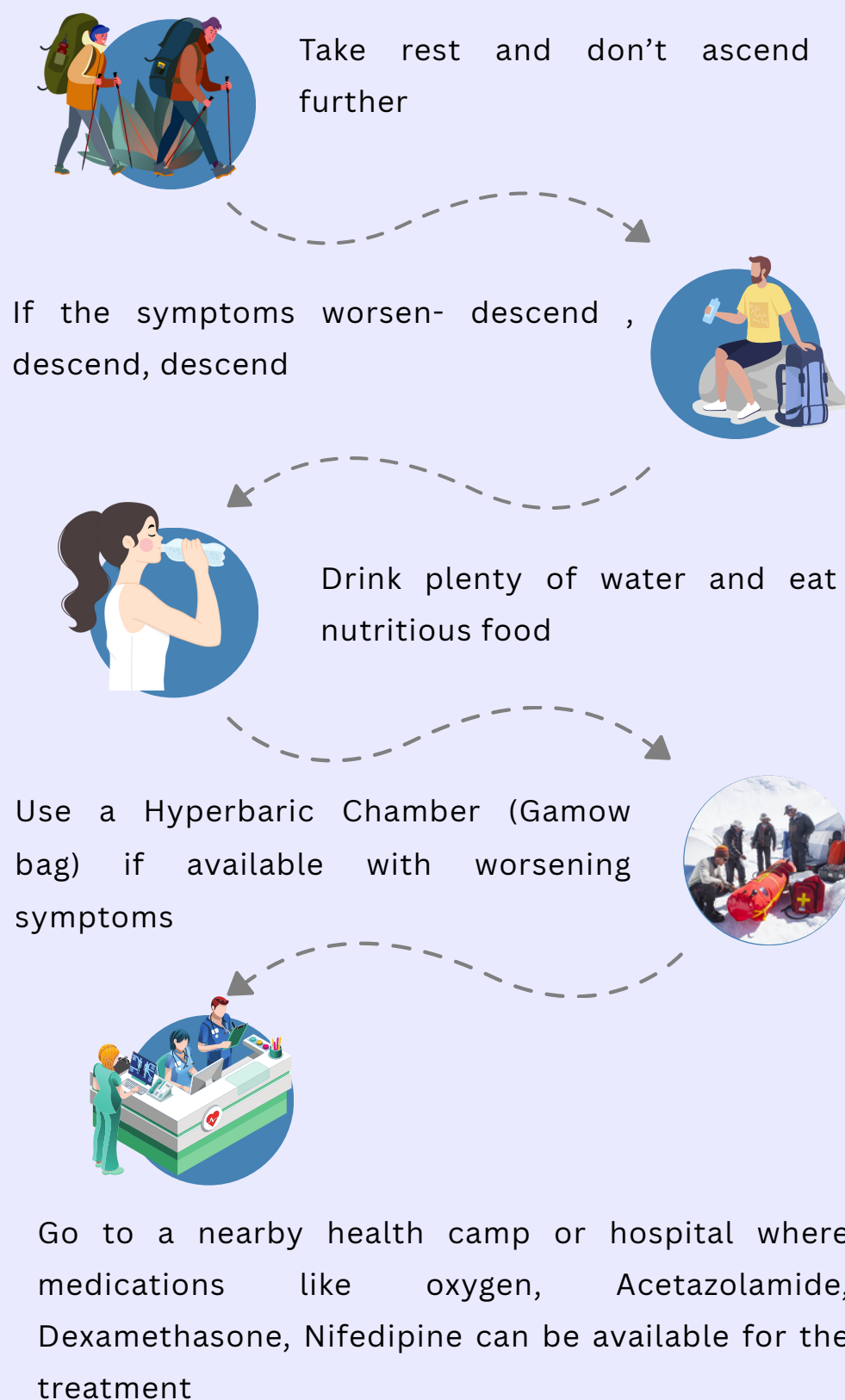
Altitude illness refers to a group of conditions that occur when the body fails to adapt to reduced oxygen levels at high altitudes, typically above 2,500 meters (8,200 feet). It occurs when you climb to a high altitude in a short period of time, > 500m height gain per day above 2500m height from sea level. Rapid Ascent to High Altitude (>2,500m) → Reduced Atmospheric Pressure → Decreased Oxygen Availability (Hypoxia) → Body Fails to Acclimatize (Inadequate Adaptation) → Symptoms of AMS, HAPE or HACE Appears



SYMPTOMS

- 
Headache
- 
Nausea, vomiting
- 
Feeling tired, dizzy
- 
Cough, difficulty breathing
- 
Slurred Speech
- 
Unable to walk, hallucination, Loss of consciousness

TREATMENT FOR ALTITUDE ILLNESS



SOME MISCONCEPTIONS AMONG NEPALIS

- "I am Nepali, so I am immune to Altitude Illness",
- "Garlic and ginger can prevent Altitude Illness",
- "I am physically fit, so I am immune to Altitude Illness"
- "I am feeling discomfort while climbing up, I can take a horse ride to go climb-up further - which may actually worsen the symptoms"

Reality: The key is the body's ability to adapt to low blood oxygen level.

PREVENTIVE MEASURES

- 
When climbing above 2500 meters, do not climb more than 500 meters per day,
- 
Take a complete day rest on every 3-4th day of trek.
- 
Drink plenty of water, eat plenty of nutritious food
- 
Do not ascend if you start to feel uncomfortable or if you start to experience the above symptoms.
- 
Use prophylactic medications such as Acetazolamide/Dimox.