2. Dexamethasone helps treat the symptoms of HACE and should be initiated in HACE. In these circumstances, patients should also initiate descent

ii. Consider use of acetazolamide at the above dosing

c. HAPE: All therapies listed below should be considered as adjunctive to descent. Descent should always be the primary treatment modality
   i. Nifedipine: **Adult** 30 mg ER (extended-release) PO twice a day. **Pediatric:** 0.5 mg/kg (max single dose 20 mg), extended-release PO every 8 hours
   ii. If nifedipine is not available:
   iii. Tadalafil: 10 mg PO twice daily may be used

   OR

   i. Sildenafil: 50 mg PO three times a day may be used
   ii. Multiple pulmonary vasodilators should not be used concurrently

Patient Safety Considerations

1. The high-altitude environment is inherently dangerous. Rescuers must balance patient needs with patient safety and safety for the responders
2. Rapid descent by a minimum of 500–1000 feet is a priority, however rapidity of descent must be balanced by current environmental conditions and other safety considerations

Notes/Educational Pearls

Key Considerations

1. Patients suffering from altitude illness have exposed themselves to a dangerous environment. By entering the same environment, clinicians are exposing themselves to the same altitude exposure. Be vigilant in looking for symptoms of altitude illness amongst rescuers
2. Descent of 500–1000 feet is often enough to see improvements in patient conditions
3. Patients with HAPE are suffering from non-cardiogenic pulmonary edema and may benefit from positive pressure ventilation via either bag assisted ventilation, CPAP, or other means of positive pressure ventilation
4. Patients suffering from altitude illness are commonly dehydrated and require IV fluids — once resuscitation is complete and the patient requires no further fluid boluses, maintain IV fluids at 125 mL/hr
5. HAPE is the most lethal of all altitude illnesses
6. Consider alternate causes of symptoms of AMS — the symptoms of AMS may be caused by alternate etiologies such as carbon monoxide poisoning (in patients cooking within enclosed areas), dehydration, exhaustion, hypoglycemia, hyponatremia
7. Children with the following are at greater risk for altitude illness:
   a. Those with a concurrent upper or lower respiratory tract infection or otitis media.
   b. Full term infants less than 6 weeks of age, or preterm infants less than 46 weeks post conceptual age
   c. Congenital heart disease
   d. Down syndrome, especially those with obstructive sleep apnea
   e. Those with bronchopulmonary dysplasia (BPD), cystic fibrosis, sickle cell anemia, severe scoliosis, and neuromuscular diseases
   f. Premature infants beyond 46-weeks with a history of oxygen requirement, PBD or pulmonary hypertension