

UIAA Mountain Medicine Centre Information Sheet 4

Intended Distribution: Doctors, Mountaineers, Trekkers
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PORTABLE ALTITUDE COMPRESSION (PAC) CHAMBERS

Introduction

Acute Mountain Sickness, High Altitude Pulmonary Oedema and High Altitude Cerebral Oedema are managed by treatment with descent, dexamethasone, nifedipine and oxygen. These subjects are discussed in information sheets 1 & 3. However, increasing barometric pressure alone (within a chamber) also has an important place in treatment.

Pressure Bags

Portable altitude compression (PAC) chambers (airtight bags inflated by a foot pump) are very easy to use, and can be lifesaving. The patient is placed in a sleeping bag, and the chamber zipped up around them - a simulated descent of 500 metres or more can then be achieved in 5-10 minutes. Speech is possible through the bag (though indistinct) and the patient is fully visible at all times for observation purposes, and a treatment session will vary between 30 minutes and 2 hours. Any expedition to altitudes of over 5000 metres, or perhaps even lower should consider carrying a pressure bag - they weigh less than 10kg.

Suppliers:

PORTABLE ALTITUDE CHAMBER (PAC)

Treksafe, PO Box 53
Repton, NSW 2454
Australia
Tel: 0061 2 6653 4241
Fax: 0061 2 6655 0266
<http://www.treksafe.com.au/>

GAMOW BAG

Chinook Medical Gear, Inc
120 Rock Point Drive, Unit C
Durango, CO 81301
970.375.1241 phone
800.766.1365 toll-free
970.375.6343 fax
<http://www.chinookmed.com/>

CERTEC CAISSON

Certec
Sourcieux-les-Mines
69210 L'arbresle
FRANCE
Tel: 0033 474 70-39- 82
Fax: 0033 474 70-37-66
richalet@smbh.univ-paris13.fr

Each of these systems is effective and reliable. The PAC is the cheapest at present, and may also be rented from White Magic in Kathmandu (Tel: +977 1 253225, Fax: +977 1 249885, email: wmagic@wlink.com.np). Further updated information on availability may be found at <http://www.high-altitude-medicine.com/>

Effects of Treatment

This simple physical treatment can undoubtedly be life saving. Patients with AMS often feel an immediate improvement within a few minutes, however with pulmonary or cerebral oedema cases, improvement is slower, taking several hours. The treatment can be repeated every few hours, over several days.

With the patient is enclosed in the chamber (combined with serious illness) claustrophobia can be a problem; plenty of reassurance is necessary to confirm that there are no serious unwanted effects. Pain in the ear is sometimes a problem as the pressure changes, particularly if the patient is suffering from a head cold. The subject should be told to swallow regularly to equalise pressure in the ears, and an altimeter taken inside the chamber may be useful. Outside, the observers should maintain contact with the patient (keep talking to them), and should not lean on the bag, which causes a sudden, unpleasant increase in pressure within!

It is important that all members of an expedition understand how to use a Pressure Bag, and actually test the system themselves, before an emergency arises.

Recently, PAC chambers have also been advertised as useful adjuncts for athletic training, and acclimatisation before going to altitude, however there is little solid information and their value in this role is questionable.

Updated October 2002 by Dr Charles Clarke FRCP

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