

# Exped 2010 – The Challenges of an Expedition Doctor

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## Abstract

'Exped 2010', a climbing and trekking expedition to the Everest region of Nepal, marked the 150th anniversary of the Army Cadet Force, during October 2010. A team of 20 cadets aged 14-18 years together with a combination of adults, mountain leaders and the expedition doctor, completed the trek to Everest Base Camp with a small number summiting Island Peak. The junior team, consisting of younger members aged 14-16 years, were limited to sleeping at a maximum altitude of 4240m but nevertheless, achieved a trekking altitude of 5000m. Over the three week period, there were a number of challenges for the expedition doctor - integrating into the team, finding time to rest and acclimatise along with the others whilst dealing with over 35 consultations, numerous cases of traveller's diarrhoea, several helicopter evacuations and also managing cases of altitude illness both within the group and for several foreign trekkers along the way.

## Introduction

Exercise Dragon Venturer Eagle was a trekking and climbing expedition conducted in the Everest region of Nepal during October 2010, marking the 150th anniversary of the Army Cadet Force. It included a team that trekked to Everest Base Camp (5267m), a junior team that reached a maximum sleep altitude at Pheriche (4240m) and also a team that climbed to the summit of Island Peak (6189m). The team comprised 20 cadets aged 14-18 years and 17 adults - a combination of those involved in the Derbyshire ACF and additional Mountaineering Leaders plus the Medical Officer. This article outlines the challenges of being the expedition doctor - from joining a group that has been training together for two years, to undergoing personal challenges to rest, acclimatise and complete the 10 day trek to Everest Base Camp whilst simultaneously dealing with a variety of altitude and non-altitude related illnesses.

## Pressures

On arrival in Kathmandu, all mountain flights had been cancelled over the previous two days due to weather which was also affecting other expeditions to the area. An initial team of 10 managed to get early morning flights after three days on standby and started the trek from Lukla (2840m) to Phakding (2610m). This team was supposed to include me as the Expedition Doctor, but it became necessary to remain with the main group, as there were already a number of patients to be reviewed. The following day, the remainder of the group flew by helicopter to Phakding, to begin the trek that day to Namche Bazar (3440m). With these delays, it was important to emphasise the importance of acclimatisation as there were now time pressures. In particular, the Island Peak team would now head to Chokkung (4730m) from Dingboche (4410m) to make the attempt on Island Peak (6189m), forfeiting the trek to Everest Base Camp (5267m).

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## Acclimatisation

With the split, the first 10 trekked to Phakding and stayed there overnight. Telephone communication allowed liaison with the Expedition Organiser and advice for three individuals complaining of a mild headache. They had already taken paracetamol and my advice was to also take dioralyte, ibuprofen and ensure plenty of fluids overnight. Because of the time pressures, the remaining group had no option but to fly in via helicopter. One plan had been to fly into Namche Bazar and rest for three days however with a height gain of 2040m from Kathmandu (1400m) to Namche Bazar (3440m) in around 90 minutes, this was determined too high a risk for developing Acute Mountain Sickness (AMS) and / or High Altitude Cerebral Oedema (HACE) or High Altitude Pulmonary Oedema (HAPE). Instead the remaining group flew to Phakding, trekked and stayed in Namche Bazar (3440m) that night - a height gain of 830m trekking and 2040m sleeping altitude. There were only two cases of mild AMS that required use of acetazolamide during the acclimatisation phase at Namche Bazar; as one team member collapsed on the initial trek, I made the decision that we would have three nights at Namche Bazar to enable all the group the opportunity to fully acclimatise.

## Diet

Prior to departing the UK, all expedition members were briefed about dietary requirements whilst trekking in the Himalayas, with particular emphasis on eggs and dairy products, in addition to hand hygiene, as risk factors for contracting diarrhoea and vomiting (D&V). Whilst still in Kathmandu, six individuals suffered diarrhoea, vomiting or both. There were a number of potential causes for this – adjusting to the new diet in Nepal, the fact that some of these individuals were eating eggs at mealtimes and also that with the delays, requests were made for pizza and KFC, which are notorious in Nepal as sources of bacterial Traveller's Diarrhoea – mixing both western and Nepali foods at differing times of the day. Overall, half of the cadets and adults reported symptoms of D&V throughout the expedition. For both groups, this was at the high end of normal for estimated incidence of travellers diarrhoea (20-60%) [1]. This was despite good education of team members

and a high degree of awareness of the problem. Unfortunately, advice became something of a running joke with some of the older group members - demonstrating at times the naivety of the group to the well documented health risks of trekking in the Himalayas. In addition to repeatedly ordering western-style foods such as pizzas smothered in Yak's cheese and other greasy fast foods, there was also a large consumption of junk food with chocolate being eaten after meals and as snacks, rather than as hill food.

### Medication – Acetazolamide

Each member of the expedition was advised to acquire a supply of acetazolamide from their local GP as part of their expedition medical kit. There was widespread variation between the quantities supplied and the doses prescribed indicating the limited knowledge of GPs about its use as an unlicensed drug to aid acclimatisation. Whilst in Kathmandu, some individuals had taken it upon themselves to start acetazolamide – at different doses. Kathmandu is at an altitude of 1400m and acetazolamide is not indicated at this elevation. It is not clear why they had started this medication but it did indicate that despite lectures back in the UK, its use was misunderstood. It is my belief that many members did not understand the implications of taking acetazolamide and, that in doing so at this low altitude, were only potentially dehydrating themselves prior to the trek and needlessly exposing themselves to any of the side effects. A decision was therefore made to collect all the acetazolamide, with its subsequent use being monitored in accordance with the Lake Louise Scoring system and any presenting symptoms typical of AMS. Out of a total 29 individuals who trekked to Everest Base Camp (5267m) and around Pheriche (the Junior Team achieving a maximum elevation of 5000m), only nine were started on acetazolamide – six of whom were cadets. Of these six, only two were for AMS alone, one was as an evening dose for a cadet with periodic breathing, another had been started on it following a panic attack and the others had concurrent D&V which in itself can slow the acclimatisation process.

### Other Medication

Whilst in Kathmandu and on the expedition, several expedition members required treatment with antibiotics for minor ailments such as bite infections, tonsillitis and unresolving D&V. Despite pre-expedition planning, there were still a number of people with no personal supply of antibiotics. This proved difficult once in the mountains, however, it was possible to obtain supplies in Namche Bazar and Pheriche as necessary. Two individuals had been prescribed norethisterone to delay the onset of menstruation whilst trekking - one of whom was unwell for about a week with intermittent D&V plus lethargy and nausea. Once back in Kathmandu, and with this medication as a possible contributor, it was stopped with the result that symptoms settled the following day. The oral contraceptive pill may have worked better with less side effects. I also noted on one occasion that an individual in desperate need for loperamide was handed a medication by a team member which they had been taking without my knowledge. This had been purchased at a supermarket in Thamel (Kathmandu's tourist centre) and was in actual fact, an unusual combination of metronidazole and diloxanide furoate.

### Medical Evacuation / Helicopter Rescue

There were four cases that required either medical evacuation to a lower altitude or back to Kathmandu. The first was a cadet

complaining of dizziness whilst on the ascent to Namche Bazar who collapsed after being told to rest by me as they were breathing rapidly. Although altitude illness was considered, they appeared to have suffered from a panic attack. This resolved by breathing into a bag and the diagnosis was supported by a high SpO<sub>2</sub> (98%). Prior to arriving in Kathmandu, they had seen their GP for a chest infection and although not treated with antibiotics, had been using steroid and salbutamol inhalers. They were commenced on acetazolamide as AMS could not be excluded and evacuated to a lower altitude with the Expedition Organiser and another Mountain Leader, re-ascending the following day and reaching Everest Base Camp without any further problems.

At Namche Bazar on the third evening, our main Nepalese guide was complaining of left loin pain of sudden onset, suggestive on history (examination was refused) of renal colic, and unable to adequately control the pain he was taken by helicopter to Kathmandu. The diagnosis was confirmed when he passed two small stones with resolution of his symptoms. The remaining helicopter rescues were higher up on the trek. The first was for an individual who at Namche Bazar, appeared to have had a fever - sleeping first in a down sleeping bag with two blankets and then finally in just a silk liner. Having rested for a few hours that morning, they joined us at Tengboche, struggling the following day with the trek to Dingboche. Despite attempts with oral antibiotics to treat a suspected recurrence of an infection from a few months previous, they continued to deteriorate whilst acclimatising at Dingboche and then on the second day there, developed severe D&V. They were evacuated by helicopter and treated in hospital for severe food poisoning with intravenous antibiotics and rehydration, the likely source being an infected Yak cyst from meat on the trek.

The second evacuation was from Gorak Shep (5140m). In retrospect, this individual had been slow to acclimatise - first evidenced by going for 24hrs without passing urine whilst at Namche Bazar. This indicated they were not drinking enough fluids, contributing to developing first mild AMS at Tengboche that resolved with simple painkillers and rehydration but nevertheless progressing to moderate AMS on the Lake Louise System at Dingboche, requiring acetazolamide. On the day of trekking to Everest Base Camp, they were slow and complaining of abdominal cramps, now volunteering they had not opened their bowels for five days. A decision was made to rest them at Gorak Shep, missing the final part of the ascent. By early evening they were vomiting and the next morning, weak from poor oral intake and dehydrated, they were unable to trek out of Gorak Shep. On returning back to the hotel for helicopter evacuation, they collapsed and received 2.5 litres of intravenous normal saline. It transpired a further 24 hrs had passed without urine, despite being on acetazolamide which acts as a diuretic. I suspected the vomiting was secondary to constipation and that they had collapsed as a result of dehydration. In hospital in Kathmandu, they were treated for dehydration and constipation, responding well to an enema and further IV fluids.

### Is there a doctor who can help?

Despite previous experiences as an Expedition Doctor, nothing can prepare you for a unique group of individuals who may at any time become unwell whilst on a trek. Before leaving Kathmandu, some of the younger team members were panicking and asking for help at 2am because someone had vomited once; many of them were just not used to being away from home for so long,

and with that, being in a third world country and unwell at the same time can make for a miserable experience. It was difficult to enforce set 'clinic' times as you can't predict when someone will feel unwell; additionally, it was difficult to find time to rest and look after myself - each time I sat down, someone would come asking for help.

Whilst in Namche Bazar, I was approached by the owner of the tea hut to look at a lady who had returned, having become unwell further up the trek at approximately 3900m. She had severe AMS with dehydration and hypoxia (SpO<sub>2</sub> 65%) that presented with headache, visual disturbance, vomiting and confusion. My initial concern was cerebral or pulmonary oedema, however there were no clinical signs consistent with these diagnoses and she was commenced on acetazolamide and oral rehydration. The casualty was seen by the clinic nurses from the Mountain Medicine Centre in Namche Bazar who continued her care with overnight oxygen. She made a full recovery and rejoined her group on the way down. At Lobuche (4910m) I was asked to look at one of the hut owner's staff - it was apparent he had symptoms of acid reflux (which is common in locals) and without a suitable supply of medication, I left a copy of my notes and 50 rupees for him to attend the HRA Post at Pheriche. There are times on the trek you can't help - but only witness mistakes that people are making and the health risks that ensue. I watched a lady ascend from Dhugla (4620m) with

symptoms that were causing her to stop frequently and grimace. When I asked if this was a headache, she replied yes - but that it was "okay; she had taken a dose of 'Diamox'". I advised her she should go back down but it is very difficult to do anything else. It was a classic example of trekkers misunderstanding the role of acetazolamide in aiding acclimatisation - a finding my colleague had at the HRA Post in Pheriche.

### Summary

Exped 2010 was a great success for all involved and as an expedition medical officer, it was at times hard work and tiring, in addition to the fatigue associated with trekking at altitude but nevertheless, a rewarding experience. In total, there were over 35 consultations, four medical evacuations, a variety of trivial conditions and a marked number of D&V cases. It was a good opportunity to develop diagnostic skills in altitude illness and treat accordingly, building on a similar expedition in 2008. Overall, it was just exciting to experience more remote medicine in the mountain environment.

### References

1. National Travel Health Network and Centre website. Accessed Jan 2011 <http://www.nathnac.org/travel/factsheets/travellersdiarrhoea.htm>