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Medicine on the Run - Experiences from Trail Running in Nepal

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In the present day world, the reasons behind human travel have expanded greatly to include adventure and entertainment. Trail running has become an increasingly popular adventure sport over the years leading people to explore new and challenging trails around the world. With a combination of both hiking and running, often on sloping terrain with constant elevation changes, trail running has been a suitable option for people looking for both leisurely as well as competitive running.

From April 2015 to April 2016, I embarked on two different trail race events as a Trail Race doctor – the Mustang trail race[1] and the Manaslu Mountain Trail race[2]. Both races are organized on an annual basis by Trail Running Nepal and involve multiple stages of 15 to 30 kms per day on altitudes of 2900-3400m (9,500-14,000 ft.). The consecutive days of relatively longer distances at moderate to high altitude provides considerable challenges both in terms of sporting activity and training for runners from various countries around the globe.

Clinical role of Trail Race Doctor
As a medic, my role in both Mustang and Manaslu trail races was to attend to the medical needs of the entire group consisting of international and Nepalese runners. I also organised team of guides, porters and kitchen staff. I covered the whole distance staying towards the back along with the sweeping team, and was available to participants mostly after completion of each stage at the end of the day. I treated any medical illness encountered by participants, support staff and at times also had to give medicines and advice to members of the local population where the group were staying.

Participants and Medical Screening
Participants were enrolled online by Trail Running Nepal and were asked to complete a medical questionnaire signed by their general practitioner before arriving in Nepal. The questionnaire provided information regarding the medical and surgical history of all participants as well as prior exposure to altitude and past incidence of high altitude illnesses if applicable. I had an opportunity to meet all participants and answer any medical questions and provide relevant advice during the pre-event meet up in Kathmandu before leaving for the race.

Most participants had a high level of baseline fitness and were actively taking part in marathons and half marathons back home and the need for any further examination or investigations was deemed unnecessary. Participants had varying levels of prior knowledge regarding altitude-related illnesses and more information was provided in evening briefings during the course of the race.

Medical Kit
The medical kit from the previous races was reviewed and any medicines and equipment were restocked as necessary. Feedback received from expedition doctors and previous doctors who covered the race played a significant role in estimating quantities and designing the medical kit. Participants were encouraged to pack their regular medications along with commonly required painkillers, electrolytes, small bandages and other frequently needed items with them.
The medical kit for the team was arranged to be transported along with other luggage by porters, mules, or a tractor depending on the means accessible and the terrain. I carried a personal kit with me during the day for easy access if required on the trail.

Medical Problems Encountered
The medical problems encountered during the races mostly included common complaints expected in any remote expedition. It was reasonable to expect significant number of complaints related to physical exertion, trauma, dehydration, and altitude. In addition, the potential for critical and life threatening conditions requiring urgent evacuation could not be ruled out at any stage.

Gastrointestinal disturbance was by far the most common complaint in most participants, causing an impact on their running performance at certain stages. Very few runners could escape the nuisance of acute attacks of watery diarrhoea with or without nausea and vomiting. They were treated with a short course of azithromycin and loperamide for relief of symptoms. Treatment with antibiotics was preferred based on local data regarding traveller's diarrhoea[3] and the need for early resolution of symptoms so that the runners could continue.

Almost all of the international runners normally resided at sea level. The route was designed within the guidelines of the Wilderness Medical society (WMS) regarding safe ascent with gains in sleeping altitude no more than 500m at any stage and rest days in between[4]. Symptoms of altitude sickness were common occurrence with most cases developing headache and mild Acute Mountain Sickness (AMS) as defined by the Lake Louise Criteria[5]. Ongoing dehydration from running and concurrent episodes of gastroenteritis were also believed to have played

Medicine on the Run - Experiences from Trail Running in Nepal *continued*

some part in the development of headache and other non-specific symptoms. There were no cases of severe altitude sickness or High Altitude Cerebral Edema (HACE) or High Altitude Pulmonary Edema (HAPE) requiring emergency evacuation.

Cough was a bothersome complaint especially in the dry arid environment of Upper Mustang in the Mustang Trail Race. Causes of altitude related cough have been explored and could be related to exercise causing increased rate of ventilation among other factors[6]. Use of antibiotics for chest infection in some cases was decided based solely on findings of clinical examination.

Other respiratory complaints included shortness of breath along with chest tightness and wheezing in one participant with a history of asthma. Along with acetazolamide for his coexisting symptoms of mild AMS, the patient was also given a short course of prednisolone after his symptoms failed to improve with salbutamol inhalers alone. The patient reported significant improvement in symptoms and was able to continue and complete the race.

Other commonly occurring symptoms were those related to physical activity such as muscle cramps, fatigue, blisters, and pain in joints, most frequently involving the knee. Minor trauma from falls and stumbles was not uncommon in the rough and rocky terrain of trails causing minor scratches to lacerations requiring suturing in one instance.

The scope of medical consultations was not limited to participants and staff of the trail races. The local population of the remote districts of Nepal, living in poverty and with limited access to health services, also frequently came to seek medications for their conditions. While medical advice and medicines were given for acute problems as far as practical, the local population were encouraged to visit their nearest health centre for evaluation of their chronic conditions requiring regular follow ups.

Summary

The need for planning and preparedness is heightened in every expedition into remote and challenging environment. Planning was guided by various factors - the principal ones being how far one would be from an aid-post or centre and what sort of activities would one be involved in. In the setting of a multi staged trail race event, a group can be spread out throughout the trail during the day. The role of a medic in addition to medical consultations at the end of the day should also be focused on general medical evaluation of participants, emphasizing on awareness and preventive measures and having an evacuation plan such that adventure events can be conducted smoothly in remote and challenging environments.

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