Newsletter of Mountain Medicine Society of Nepal (MMSN) 2008

Contents

Editor's Choice:

Of mountains and mystery

Siddhartha Yadav

Mountains and mystery both start with an 'M'. However, they have a lot more common in them than just that. To begin with, it is a mystery why we exhaust our energy, time and resources to go to these mountains with adverse living conditions- a question that has often come up during our journal clubs. Is it the adventure, the sense of achievement or the grotesqueness of these mountains that attracts us?

Our reasons are varied and each of our reasons is yet another mystery. For some of the distinguished amongst us, mountains serve as one of the resources for contributing to scientific knowledge through research. For them, it is never the agony of the quest for the scientific knowledge but the rapture of their results that counts (*The rapture of the revealation; pp 2*). They continue to inspire us to step into the world of scientific learning as opposed to traditional didactic teaching in a developing nation like ours.

Another mystery: altruism. Not everything can be evaluated with the balance of gain and loss. Health care at high altitudes like Manang is largely dependent on volunteer doctors. It takes a lot of courage and determination to go and work there as a doctor *(Letter from Manang; PP 3)*. And in the end, you are not even paid for it. But there were, are and will always be doctors who will think beyond the narrow gauge of benefit and loss and work altruistically to make the lives of their fellow human beings better.

In the end, whatever your reasons may be, while you are there, you might as well enjoy the place and the hospitality (*Pheriche and Lobuche and MMSN; PP 10*). It is bound to be a totally different, some might even say life-defining, experience.

Having said that, we have tried to size-up the bits of this mystery regarding the mountains in this newsletter. However, you will still end up thinking that mountains are mysterious. That is the beauty of it. In the forth coming pages, I welcome you to the world of mountains and mystery. Enjoy reading it!!

Siddhartha Yadav, Editor in Chief,
MMSN Newsletter

The rapture of the revealation

Buddha Basnyat

A famous philosopher said that in life "it is not the agony of the quest but the rapture of the revelation" that counts. I would like to see if I can make it relevant to our discussion here on research. Research as you know is not inherent in our "memorizing" culture. Hence as a result as many of you have heard me say ours is not a documenting culture. In fact we may say that we want to be involved in research or that we should be involved in research, but there is a fundamental disconnect between knowledge and practice in this regard.

Take the example of the intern at a major learning medical institution here who asked for time off to go to the mountains to be involved in high altitude research for a month. The professor in charge told the intern that research is not what interns do. Interns need to sit down and memorize facts, that indeed he (intern) could pursue research after he had acquired all other basic knowledge, probably after he became as old as the professor, that is over 50 years.

This kind of attitude of the professor is almost universal in our part of the world. It is hardly conducive to conducting research, let alone making important scientific contributions. Many important ideas are generated when you are young and driven, not generally when you turn into a decrepit old man!! Another example: A study on TB drugs was being carried in a major Indian institution. A local professor ridiculed the work saying that this was of little use as the latest edition of Harrison's Principles of Internal Medicine made no mention of these drugs, and he thought that the drugs were toxic. If you have ethical clearance, isn't the reason why we do research is to find the answers to help people and suffering humanity with newer, useful treatment modalities regardless of what our personal notions or biases are? Otherwise medicine as we know it today would come to a stand still.

I also bring these two examples to show you that this attitude is prevalent not only in Nepal but almost all of South Asia, and we at the MMSN have a golden opportunity to ever so slightly make a "dent" on this non research oriented culture in our part of the world. It is a question of putting knowledge into practice. We need to do this not by being excessively critical of our learned teachers like the ones in the above example but by trying to understand them. The stress on academia in this culture is wonderful, and thanks to the likes of the teachers above.

But scientific research is in another league. You at MMSN are in the forefront of doing research and seeing how this works out. Many of you have written letters to the editor, case reports and many indeed have taken part in physiological research or double blind placebo controlled trials, stuff that your old professors never got a whiff of, to put it bluntly. For them as medical students, interns or house officers, the emphasis was on total recall. That's it, total recall!!! "Gurulai pathhe bhujau"

So we need to understand this point and look at their situation with understanding and compassion which will help us to move ahead as a society. Because you at MMSN are all young and enthusiastic, you need to seize this moment. Which brings me back to the saying of my mentor, Joseph Campbell that I began this piece with. "It is not the agony of the quest but the rapture of the revelation". Actually even the quest may not be as agonizing as Campbell suggests (he was of course not referring to scientific studies but philosophical/ mythological discourses); but the quest may even be effortlessly handled by some, like a natural path.

When the results of our study are properly analyzed, written up and submitted to be reviewed by knowledgeable peers, and finally published, the result (revelation) could possibly bring rapture to our hearts like a job well done!!! Don't you think this is immensely possible to achieve? So let us make a pledge to be a documenting society in the scientific world and continue to write so that this will be our way of helping our nation and humanity at large!!!

Dr. Buddha Basnyat, President
Mountain Medcine Society of Nepal (MMSN)

Letter from Manang

Matiram Pun

Today is a Saturday but the days of holidays and half days are not the rule here at Himalayan Rescue Association's (HRA) aid post situated in Nepalese Himalayas. It has been a week since I resumed my work here at Manang (3550m) aid post of HRA and I will be switching to Thorang Phedi (4550m) soon to run a temporary high altitude aid post which I think will be a real challenge.

Here at Manang, there are three doctors – Dr Justin (Emergency medicine specialist from Louisiana, USA and currently practicing in New Zealand), Dr Jan (consultant general practitioner and diploma in Mountain Medicine from UK) and myself. There is Justin's wife Summer who is a nurse and Mr Gobinda Bashyal (a very friendly and experienced guy from HRA as an aid post manager), Mrs Indira (to look after store and kitchen from HRA) and Mrs Nani (HRA staff from Manang proper to help the staff in general). So, we are living as a very good family here in this altitude with daily snowfall and pretty cold environment while Kathmandu suffers a scorching sun and boiling politics for constitutional election.

Dr Justin and his wife Summer jumped to Thorang Phedi for the temporary aid post while Jan and me are taking care of Manang. Justin will come down in a week and then, I will move up.We are getting a steady stream of patients: both locals and tourists. A lot of paediatric cases are coming in from the locals while the trekkers are coming with a wide range of problems. Any time is entertained for consultation but fees are doubled in the periods other than usual time i.e. 9 Am to 5 Pm. There is a free altitude lecture at 3 Pm everyday.. These days, Jan and I are taking lectures on an alternate basis.

Everything is going very well: Mr Gobinda Bashyal is managing efficiently; Mrs Indira's kitchen has been fantastic; and we are trying our best in every possible way for the clinic. The teamwork has been wonderful. The community is fantastic. We have already been invited a couple of times for dinner by the locals. They were really good and everybody enjoyed the hospitality.

It has been a matter of great honour to follow the footsteps of Dr Buddha Basnyat, Dr Prativa Pandey, Dr Puncho Gurung and Dr Prajan Subedi as an HRA volunteer in Himalayan medical aid posts. I'm the fifth Nepali Doctor in overall and third at Manang after Dr Puncho Gurung and Dr Prajan Subedi (who are my very respected seniors). I'm very much grateful to these pioneer doctors especially Dr Buddha, Dr Puncho and Dr Prajan who have taught, guided and encouraged me to work in the field of mountain medicine and high altitude physiology. I'm thankful for the cooperation and help from Dr Kshitiz Alekh (Vice President of MMSN, the second executive body) and encouragement from Dr Sony Srivastav.

Dr Sanjay Yadav, Dr Denny, Dr Piotr have helped me to assemble the materials for the high altitude practice. Their links, materials and suggestions have helped me a lot here. Millions of thanks to Dr Puncho Gurung who had long but to the point suggestions, tips, briefing and recommendations to me before I left for Manang. Manang is unique. I have been enjoying it a lot.

Practicing medicine in the settings of 'no lab work' and limited supply with community people and trekkers is not an

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HRA Aid Post, Manang; Photo by: Mati

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easy task. Sometimes, we have to see Yaks and pets as well. True wilderness and challenge can be felt at the field site in a proper way.

In fact, coming to the HRA high altitude aid post was a big gamble for me. My sister in law is on chemotherapy (fifth cycle) for breast cancer and I am the one who has to look after and take all kind of medical decisions. Definitely, she would have liked me to stay with her. And then, my internship is getting delayed further and further!!!. Third one is my correspondence, a fate determining one, but I turned a blind eye to it and jumped into the mountains. And of course there are financial constraints because what I have been doing so far is all volunteerism along with some investment of money as well, besides the time and skill. However, I am happy with what has been done.

The internet service is quite limited here. There are only three laptops in a cyber café and the service is from 9 Am to 12 noon and from 5 Pm to 9 Pm. There is always a crowd of trekkers waiting in the queue and the internet is very slow. The charge is NRs 25/minute which is definitely expensive. Therefore I have been typing my emails here in the HRA's lap top and taking them in the pen drive to email them so as to reduce the cost!!!

Things have just started and there is a long way to go.

Dr. Matiram Pun, HRA Volunteer
Manang Aid Post, Manang
April 5, Spring 2008

A journey continues

Soni Srivastav

It was late in the evening as the train came to a stop at Aviemore Station, in the heart of the Scottish Highlands. It was the little town where the Wilderness and Mountain Medicine Congress 2007 was to be held.

To my eager eyes, the little place was like a fairyland in the evening glow. I set about searching for the youth hostel I had booked a place at. A lot of the participants were staying at the grand resort where the conference was being held, but that was far beyond my means. In fact, I was able to attend this conference with it's five hundred pounds fee because of the kindness of Jim Milledge, whom I had met during his talk in Kathmandu.

The talks and workshops at the conference held me spell bound and made me realize how much potential there is in this field for doctors like us, living in the land of the Himalayas.

There were spluttering star-struck moments when Prof Basnyat introduced me to John West, Peter Hackett and the likes. I listened to, and admired the work of those like Luanne Freer, who runs the clinic at Everest Base Camp. I had admired the documentary Everest ER, and it was great to see the pretty and smart doctor in person. I also spent a lot of time dragging my fellow MMSNer Sanjay Yadav , who was also at the conference, from her talks and workshops, for he developed a huge crush on her and insisted on attending whichever talk she happened to attend!

It was thrilling to see our research 'The Role of Acetazolamide in The Prevention of HAPE' amongst the poster presentations.

This journey with MMSN has been a great one, a chance to broaden my horizon in so many ways. I have seen my country and others as I could never have had otherwise,had opportunities in research and most of all, have made so many friends.

It has been a blessing for me, and for many others who have joined this family. Like being in any family, the rewards are great, but the investments too, are many. It requires patience and hard work, but doesn't that apply to almost everything in life?

I welcome you to the MMSN family and hope that it will be as much of a blessing for you as it has been for so many of us.

Dr. Soni Srivastav, Participant, wilderness and Mountain Medicine Congress, 2007

Letter from Lake Louise

Sanju Lama

It might have seemed like yet another lifetime of opportunities opening its door or just another dream come true, allowing more dreams to follow….. and never ending so.

The series of journeys we make, physical, emotional or spiritual; surprisingly for many of us, it's always the one that comes up next is more interesting than the one we leave behind. It's got to be anyway, or else life wouldn't be worth living, exploring. One may wonder why!

Growing up in one of the most beautiful places in the world (and I know there are people who agree with me totally), a small town "Pokhara" lying in a majestic repose in the lap of Mt. Machhapuchhre, was fortunate to have my every mornings being greeted by the smiling mountain range. On my way to and from school, it was not a new thing to be asked by tourists the way to Sarankot or the way to the immigration office or the famous road to lakeside and many a curious quiz on Baglung-Pokhara highway. It was easy to be awed by the Western culture earlier on, the way people traveled across seven seas and came there to see the beautiful mountains!

Sometimes one's sheer curiosity to learn better or different, or what might be standard according to the trends and practices in medicine, or what we quote everyday in the morning rounds and journal club discussions - the urge to get to the places these concepts originate from and actually see how they do such studies to make statements in the world of scientific publication; these are the very things that teach young medicos of today to dream. In more ways than one, the westward migration is justified despite the calling from home which demands an appropriate return for the undeniable truth of being born and brought up in a country which needs you more, in every aspect of the way. Reality check: we all tell ourselves "returning back home is always there, it's in your hand; it's the going out there to the west that is a tough decision and holds importance when you're young and aspire to learn newer things".For reasons more than one, being in the Mountain Medicine and High Altitude Physiology program and running a research in hypoxia and cerebral patho-physiology in Calgary makes sense at this moment.

Trudging the uphill snowy trail in Lake Louise on a chilly November afternoon brings memories of home so spontaneously. Gosh! One doesn't even have to think! Well, nothing comes close to the mountains of Nepal, but it's hard to convince human mind and its dense neural circuitry that immediately connects and processes images and thoughts. Amazing! Then I would wonder when could be the first time a native walked this route perhaps on a horse back chanting their unique tribal prayers to the Lord of nature. Or the first settlers from Europe who came in search of better livelihood from the mines, oil-sands and natural gas of this prolific province of western Canada. Walking the winding trail for hikers in the winter and a popular summer retreat for city dwellers, it seemed like a trip back in history and human civilization, only an inch apart from the altitude related scientific endeavor. The trails do not look as mystifying and untouched as back home, yet they appear chaste and far from madding crowds. It imparts a great feeling to be among the wilderness, escaping everyday grinds, leaving work and worries behind (although they never tend to leave us is an entirely new story!) The log cabin tea house looks deserted but we sight a couple, in their mid sixties, chatting and reminiscing together as the snow birds, so used to human company up there, swoop down once in a while to grab some trail mix offered every now and then. I could easily imagine how crowded and busy this desolate looking tea house could be during the summers!

Some one blames it to the tea I had picked up on the way uphill for my rising heart rate just at about 1700 meters from sea level where we had started the climb earlier in the morning. This was where Lake Louise is situated,

the place where "Hypoxia symposium" is held every couple of years and is a Mecca for the hypoxia scientists around the world; the place that marked the international consensus for the Lake Louise Acute Mountain Sickness Symptom Score introduced back in 1992. Dr. Poulin, my program coordinator and a great friend of Nepal hands me over the pulse oximeter, so I could monitor at regular intervals, and all of us share a good laugh. He recalls doing his own marathon exercise physiology monitoring in Oxford when he did studies in hypoxia and cerebrovascular response! Putting jokes aside it might as well form a basis for a mini study we were going to perform, comparing the blood oxygen parameters at Calgary (about 1050 meters from sea level) and at Lake Agnes (1970 meters). The light gloom of the sky, frozen hands and ears at that snowy elevation posed little obstacle to this team of seven enthusiastic hikers. Amidst the light flurry and the bleak yet beautiful winter musings, the frozen aquamarine lakes and brooks tended to give me a sense of liberation. Once again, a thought buried in memory came back green and strong. My intriguing moment with a friend with acute mountain sickness in one of those private spiritual journeys to Annapurna circuit back in 2003, which had to be abandoned at the elevation of about 2400 meters…..the moment I had to convince myself and this bunch of friends that this is the only instance when the saying "Once the going gets tough, the tough gets going" contradicts its meaning (so aptly imparted by Dr. Basnyat in one of his eloquent sessions). A personal ego trip in many ways, left undone for several reasons, it did transform me as a human being though, an amazing gift the mountains are blessed with. It's not only the dare devil human spirit that draw people closer to them. More often than not, it's something beyond words, the calm solace they provide for the soul, where earth meets the sky and makes you realize there is more to life than the daily humdrum we throw ourselves into, that somewhere in the world of power, material riches, personal struggles with information mania and inboxes piled up with junks and the not so junk correspondences, there remains an esoteric glow in these snow capped landscapes that not only challenge human pride, but also teach a lot about life and living. It came as a reminder to me, long overdue, to complete that trail half accomplished, or even go higher up in a different direction this time! The thought of home and the warmth of my mother's kitchen brought a sweet familiar pang to the throat, but the topic discussion on "Hyperthermia, hypoxia and exercise tolerance" planned for the following day was something that got the better of it all. It was supposed to be a 'debate' this time and we were still short of a quick recap of the material and a brief literature review on the session. My train of thoughts comes back to reality suddenly. All three of my colleagues and I decide to stay awake, reading the whole night away once we got back down. And life would be back to yet another series of grueling studies, experiments, lectures and exams and would continue from there.

However, it was a memorable brush with nature and the Canadian Rockies, a beautiful and high spirited blend in the course and the program of mountain medicine. And besides the high profile hypobaric set up in the labs and the field equivalents of scientific studies, Calgary seems to be giving that different touch to academia in an all round holistic manner. As much as the place has a typical cow-boy tint to its culture of the wild-wild west, people are simple and warm, and have time to smile whenever they meet each other. Even if it is a stranger, they are ready to talk and offer a helping hand whenever needed.

For that matter, it seems like a home away from home. Amidst the familiarities of a seemingly unfamiliar surrounding, beyond the mountain peaks and the dreams and challenges of everyday milestones, this destination does seem to offer a multitude of opportunities in research as well as clinical academia. So the forthcoming journeys maybe more meaningful adding a whole new perspective to learning and growing experience. Every day, all along the way!

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High altitude in United States- Facts and bluffs

Pritam Neupane

United States of America or any other western country looks very different from our side of the world. It is the 'land of opportunity, freedom and fun' and to be honest, it is indeed so. But it is also like drinking beer or whiskey. One has to develop the taste for it and needs to learn to enjoy it. Otherwise it can be bitter and nauseous. Those who are able to do that are enjoying it very much here but those unable to adapt are not having much fun.

Medicine is very different in this land. Strange and expensive things which are never done in Nepal, are performed here on a regular basis. However, despite all the armamentarium, diseases and conditions don't seem any less here. Is it because they nail more of these conditions or are these people just fat and sick? This I guess will be a good research topic for young fellows like you. The point I am trying to tell is that all countries and places have their own problems and United States is not exempt from this reality.

It is always a pleasure to write for MMSN. What to write, on the other hand is a little harder to decide. Hence, let me write something really nonspecific. 'Masan'- the way we pronounced it, is my brain child. I have seen it growing and taking different colors and making friends with a lot of different people and countries. It gives me a lot of satisfaction to see it continue to grow and prosper.

in the past, I have always written about goals, objectives and why people should join MMSN etc. As I reflect, those points are still valid and are important to highlight in all MMSN meetings. The same way Christians say Amen at the end of everything they do. The positive enforcement at this stage is that now we have some objective data on the short term benefits of being a part of this club. Soni is in Nepal and she must have indulged on this matter at least briefly in the meetings. Let me tell people how I have used MMSN so far or to put it in a more politically correct fashion, how I have helped MMSN's popularity in the international world.

MMSN has always been my 'maagi khane bhando'. Wherever I go, I start out by saying 'I'm from Nepal' and somehow bring up the issue of the mountains, high altitude medicine and MMSN. It is similar to an amputee beggar in Pashupatinath - more grotesque the appearance, the better are the chances of pocketing more tips. Similarly, bigger the mountains, better the influence. The challenge or the downside of this is that sometimes the attending (consultants in our language) turn to you and say, 'what do you think?' during discussions and rounds, especially during ICU and pulmonary rounds, thinking you are somewhat an expert in this field. This could be an opportunity or a death sentence. Till date I have been successful in safely handling these situations. However, being a resident of internal medicine, it is a difficult job to keep updated in all high altitude matters. Nevertheless, if you indeed are a player, high altitude is still an ace of spades. I used it liberally in my 'personal statement' during my residency applications and I still believe it played a big role in my getting into John Hopkins University in Baltimore. Believe it or not, I used it again for my fellowship applications and these days all I do is talk about John Hopkins and high altitude medicine.

The chairman of medicine here somehow believes that I am interested in infectious diseases or geriatrics. I have told him a hundred times that it is not true. What finally happened was that they posted me for a month of geriatrics rotation. The place where I rotated was Hopkins at Bayview, which is one of the world's best academic geriatrics centers. That was all fine but then they wanted me to do a 15 minutes talk on the topic of my choice in their 'grand rounds'. Their grand rounds are real 'grand rounds'. The audience there are not just a bunch of MDs but they are real smart people many of who have published landmark articles on various subjects. They practiced hard core

medicine, ethical to the extent that they have forbidden drug representatives or even their pens from entering the premises of the hospital. Somehow I came up with the idea of doing the presentation on 'geriatrics and high altitude'. That was when I got in trouble. I have done plenty of presentations on 'children at high altitude' but geriatrics at high altitude was new for me. What I did then was turn to our other MMSN high altitude experts like Sanjay Yadav in UK and Buddha Basnyat in Nepal. I finally prepared a power point and presented in the grand rounds. I finished two minutes early allowing 2 minutes for questions and answers. I don't know what clicked but they clapped at the end and for the next week while I was there, everybody talked about my presentation and about the fact that they applauded by clapping which they never do in grand rounds. Maybe it was something out of the blue and they liked it.

I tried to sell the theory of pulmonary hypertension in all my fellowship interviews. As a matter of fact, it truly is an evolving field even for a country like the United States. High altitude model of pulmonary hypertension is a novel way to study this disease and its therapeutics which will be possible only in countries like Nepal where there is a natural habitat of humans at extreme altitudes. The theory is selling well but in this academic gamble, I have addicted myself to pulmonary vascular physiology and this and the above geriatrics experience is precisely what I wanted to share with you all at this time.

I like it when I can start out by saying 'not a whole lot exists in terms of this subject' similar to 'mechanism of action unknown' in Dr. Kafle's pharmacology classes. But it is true in the field of high altitude geriatrics. Most of the issues of geriatric population going to high altitude are about chronic health conditions which we all are familiar with. Let us say a healthy geriatric population is interested in pursuing adventures at high altitude environments. Then what do you tell them? The data shows that most of the fatalities in high altitude conditions in this age group are not related to high altitude sickness. In fact we are all aware that the incidence of acute mountain sickness decreases with age of 55 years and beyond. The fatalities are due to falls, being buried in avalanches (75%) and other causes including high altitude sickness (25%). It is seen that the incidence of the falls and injuries are directly related to the level of fitness of this population. If you look at it closely, the major health conditions that the elderly possess including obesity, heart disease, lung disease, systemic hypertension, peripheral vascular disease and musculoskeletal abnormalities, all lead to limitations of cardiac, pulmonary and musculoskeletal stability functions which are the primary systems involved in acclimatization and performance at high altitudes. Not surprisingly, it was demonstrated that endurance training prior to such endeavors significantly reduced mortality and improved performance leading to greater satisfaction in this age group. No consensus exists but off label recommendations are:

1. Three months of training involving,
2. Intensity which achieves 50-70% of maximum predicted heart rate (up to 85% with adaptation to exercise).
3. 3-5 times a week for at least 10-20 minutes per session escalating to 60 minutes per session.
4. The perceived exertion should be somewhat hard to hard
5. The activity could be anything that the person likes, for example, running, aerobic dancing, rope skipping, cross country skiing, swimming etc.

It will be interesting to follow up on any geriatrics studies that come up and if someone in Nepal would present geriatrics in one of the South Asian Summits that might be organized once again. It might look like an irrelevant topic for a country like Nepal where people above 60 are more than happy to stay home and take pride in saying 'I am the setting sun (danda pari ko gham)'. This is probably true in the field of adventure but if you look at the religious side of it, you will be surprised to find how many elderly travel to high altitude destinations, home and abroad. To

complicate matters, they try to accomplish this NPO, even without water.

Let me put geriatrics aside for the time being and shed some light on pulmonary hypertension.

I would like to give a two liner for those who are not quite familiar with this entity. It is a fatal foe for patients but quite an agreeable topic to me. The medical community in Nepal knows about pulmonary hypertension only in the context of COPD and cor pulmonale. At least that was all what I was taught. Our club members probably are more familiar with it in relation to high altitude pulmonary physiology and understand that this is the initial response in the pathogenesis of HAPE. For a long time we ignored this condition largely because there was nothing that could be done about this. However with renewed interest in this field, we have made a lot of progress in understanding the pathophysiology and likewise in formulation of new therapeutic measures. Genetics and receptor kinetics are the major areas of focus. It is always a differential diagnosis in our patients presenting with shortness of breath and chest pain. I encourage you all to think in this line whenever somebody presents with shortness of breath or chest pain.

The main manifestations in pulmonary arterial hypertension (PAH) are vasoconstriction, proliferation of smooth muscle, endothelium, and thrombosis. This in turn is secondary to imbalance in the normal relationships between the mediators of vasoconstriction and vasodilators, growth inhibitors and mitogenic factors and antithrombotics and prothrombotics. In the bigger picture, it can be looked at as a consequence of environmental triggers in the genetically susceptible individuals which initiate the cascade of events as mentioned to cause PAH. I personally believe that the human body is so complex that if you continue to look for receptors and mutations in genes, you will find plenty of them. I once remember a neurologist saying the same thing about EEGs when I told him I had done some work in EEG changes preceding AMS and thus the conclusion that EEG changes can predict those at risk of AMS. So do we chase each of these receptors and come up with 100 receptor blockers for patients? Or do we go after the final common pathway like in gastric acid secretion where we have proton pump inhibitors which block the final common gate irrespective of the stimulus which signaled the acid secretion? Obviously it is not as simple as acid secretion and one can argue that no final common pathway exists in PAH. However, calcium channel and calcium influx takes up a major share in the pathogenesis and 'final common pathway' in PAH.

The new hypothesis I have come up with regarding pulmonary hypertension is a cutting edge. This approach actually has been tried in rats in the scary laboratories of Hopkins. It was tried in cardiac hypertrophy model which is a much understood subject. In very simple terms my hypothesis is concerned with determining the exact subunits of the calcium channels which are involved in calcium trafficking in the pulmonary vessels in response to various mediators. Once the gene sequence for this receptor is identified, we can use a viral vector to knockdown the receptor gene for this calcium channel. Theoretically, this should attenuate the calcium current and possibly decrease the hypertrophic and vasospastic response of the pulmonary vasculature. Same principle can then be extended to the inhibition of fibroblast and to arrest endothelial hypertrophy. Obviously the real world is more complex than this but my quest is for the final common pathways and its inhibition.

Finally, I must admit that MMSN has been an eye opener for many of us. As far as I remember, it is MMSN which introduced the other half of medicine to us i.e. the medicine of research and publication. The fact that people are interested voluntarily in this fellowship speaks for its popularity. If you continued to be interested, I guarantee, that you will reap a huge financial, academic and physical benefit.

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Pheriche, Lobuche and MMSN

P. Ravi Shankar

Pheriche and Lobuche are two important settlements in the Khumbu region of Nepal. The Khumbu at an average height of around 3400 m is one of the highest inhabited regions on the planet. The lowest point is the village with the rather strange sounding name of Phunki Tenga at around 3200 m. I consider myself fortunate to have spent considerable time in this beautiful and fascinating region.

In 2006, I spent over a month in Pheriche and in 2007, I did the same in Lobuche. Two different studies, the HAPE trial and the SPACE trial were being conducted here. The members of the Mountain Medicine Society of Nepal (MMSN) were actively involved in both studies with support from the Nepal International Clinic and the Himalayan Rescue Association. The modus operandi for the two trials was basically the same. We basically used the excellent facilities of the trekkers' aid post at Pheriche and the huge altitude difference of over 700 m between Pheriche and Lobuche! Trekkers going towards Everest Base Camp and Kala Pathar were recruited as the study subjects in Pheriche and its sister settlement of Dingboche. Pheriche at around 4200 m is above the tree line and Dingboche (4380 m) and Lobuche (4920 m) are even higher. You have to climb the terminal moraine of the Khumbu glacier to reach Lobuche from Pheriche. This is a long, hard and tough climb and the rarefied air makes it even harder! Dingboche is just over the hill from Pheriche.

Having stayed in both Pheriche and Lobuche I must confess to a distinct preference to Pheriche. Pheriche is a narrow valley formed by the Lobuche Khola. The settlement is small and mainly famous for the trekkers' aid post run by the Himalayan Rescue Association (HRA). The aid post has grown successively in the thirty five years of its existence and today, it has enough facilities to manage most of the problems of altitude. With its battery of solar panels and a wind mill, the aid post generates more than enough electricity for its needs. These days, Pheriche has become less popular with trekkers as it is cold and windy and gets very little of the afternoon sun. Dingboche is warmer and has seen a proliferation of lodges. Most of the trekkers only patronize Pheriche on their way back from Kala Pathar.

Pheriche has around six or seven lodges. The two best ones are arguably the 'Himalayan Hotel' run by a good friend of mine, Nuru Sherpa and the 'White Yak'. With the clinic, Pheriche is a more 'happening' place than Lobuche. There are good mountain views from Pheriche but Lobuche has a definite advantage in this department. There are good views of Cholatse and Tawachee and of Kantega and the chain of mountains to the south. Khumbu consists of chains of mountains bisected by river valleys.

The land is barren and with the wind roaring towards Tibet from the late morning, it can get very dusty. The Lobuche Khola gives rise to a number of small rivulets around Pheriche. The Himalayan Hotel is designed like student hostels of yore with a central corridor and rooms on both sides. The rooms are wood paneled and carpeted but with only the minimum basic furniture. The indoor toilets are neat but they are not of the western flush

Photo By: P. Ravi

toilet type demanded by more fastidious tourists. The dining room is warm and the food is very good. The tables lighted by candles in the evenings with soft music playing in the background lead to a very romantic atmosphere. The hot towels served to wipe your hands and faces are a delight to the senses.

The 'White Yak' is newer and has a tastefully designed dining room and a very modern Sun room. The bed rooms are luxurious and many have attached bath rooms. My friends, Skip and Riley from the States and Beth from the United Kingdom stayed there during the SPACE trial and were never tired of signing the glories of the place. In 2006, I spent my mornings at the Himalayan Hotel and the afternoons at Dingboche. We used to go over the hill and then descend slightly to Dingboche. Dingboche is a huge place by Khumbu standards and has over twenty lodges and sprawls over nearly a kilometer. We used to go from lodge to lodge drumming up people for the afternoon lectures at 3 pm at the Snow Lion lodge. The high altitude talk is an important recruiting ground for the study. The Snow Lion is at the entrance to Dingboche and has large rooms and a warm dining room. The bifurcated view of Ama Dablam from Dingboche and Pheriche is so different from the classical reclining arm chair view from Syanboche, Tengboche and Pangboche. Ama Dablam is a fascinating mountain and the perspective changes within a few kilometers. In this respect I found it quite similar to

Photo By: P. Ravi

Machapuchhre.

The Himalayan Hotel has a warm sun room and a delightful collection of books which are great to while away the time. Nuru keeps on adding new and interesting ones to the collection each year. Nuru has a delightful character and has his own table in the dining room and his taste of music is eclectic. He has studied interior designing from Bangalore, India and his efforts and skills are evident in the glorious decoration of the lodge. He is planning to build a luxury annex which will be ready by April this year. Rooms with attached bath, running hot water, a huge and luxurious dining room and a multi cuisine restaurant are a few of the star attractions. Pheriche, like the rest of the Khumbu and other trekking regions, goes to sleep by around eight at night and has the air of a relaxed and lazy settlement.

Lobuche has a very bad reputation. Authors of the past have given Lobuche a bad press. In the last two years however, Lobuche has changed for the better. The establishment of the up market Eco Lodge was one of the first steps towards the gentrification of Lobuche. We (the trial members) usually stay there. In 2007, I spent around a month at the Eco Lodge. The rooms are expensive at around 20 US$ a night though we (trial members), as regulars, get a discount and pay Rs. 300 a night. Still quite expensive! The Alpine lodge is new and has a large and warm dining room. A few rooms are operational and the rest are under construction. The other lodges are quite basic.

Lobuche gets terribly crowded in peak season. There are only six lodges and over three hundred trekkers can crowd into them! The Eco Lodge has recently constructed an annex but the dining room has not been expanded leading to a 'crush' in the dining room! Lobuche has spectacular views of Nuptse and Tawachee. Kantega can be seen towards the south. The settlement is on the flanks of the Khumbu glacier and on climbing the lateral moraine, there are good views of Pumori and Kala

Pathar. The glacier is receding and Khumbu offers solid evidence of global warming and the havoc it is causing on the environment to skeptics! Lobuche is not as windy as Pheriche but much colder. The early mornings are the most difficult. The cold freezes your marrow, your hands, legs and other extremities. The sun is harsh and I was grateful for my dark skin during my sojourn. The fair skinned crowd have to slather themselves with sun screen and sun block to avoid getting boiled like a lobster. Walking around in the morning sunshine is a delightful activity!

The sanitation at Lobuche is primitive and the source of water supply and the sewer are the same - the Lobuche Khola which flows through the center of the town! Many trekkers contract water borne diseases at Lobuche. I remember treating an American Gastroenterologist for diarrhea and dehydration at Lobuche. The Eco and other lodges are usually filled up by around one in the afternoon. The book collection at the Eco is mainly in languages other than English. Most of them must have been donated by European trekkers.

Food at Eco Lodge was expensive. This is true for much of the Khumbu. Dal bhat was Rs. 370 a plate. The lodge mainly caters to trekking groups of the well heeled variety. Recently they have introduced chicken specialties and steaks. Chicken a la Kiev, chicken cordon bleu, minute steak were few of the delicacies on offer. At around Rs. 650 a plate, they were sadly way beyond our limited budgets. We met a diverse variety of trekkers during our stay of a month. With his long hair and rock star looks, Anip was popular among the opposite sex!

The hills around Lobuche offer spectacular mountain views. The mountains look so near to Khumbu. Almost like you can stretch out your hand and touch them! The Pyramid is a research station established by the Italian government and the European community at around 15 minutes walking distance from Lobuche. The station has superb facilities in such a remote location. There is plenty of power and the accommodations are luxurious. I would definitely love to spend a month at the Pyramid. I am sure that Anip would echo my feelings! Soni had spent some time there before (for a training course on high altitude medicine) and according to her the facilities rival those of a five star hotel!

The trek from Lobuche to Dzongla is spectacular. The path winds round a hill and the peaks of Tawachee and Cholatse are on the other side with glacial lakes in between. This is one of the closest mountain views I have ever seen. There are parallels with the trek to Tilicho tal. Dzongla is a small settlement with primitive facilities which has sprung up mainly to cater to trekkers going over the Cho La pass to Gokyo. The pass is a bi directional highway and is becoming increasingly popular with trekkers planning to combine the base camps and the Gokyo lakes in one long trip. Gorak Shep is around two hours walk from Lobuche and the route is along the Khumbu glacier. Gorak Shep is in a spectacular location by the banks of a large lake and has spectacular views of Pumori and Nuptse.

Pheriche and Lobuche are two spectacular settlements en route to Kala Pathar and the Everest Base camp. Both these have served as training grounds for MMSN members. As already stated, I must admit to a distinct preference for Pheriche. It is game, set and match to Pheriche, a spectacular jewel in Khumbu's crown!

Photo By: P. Ravi

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Destination Gosaikunda: An encounter with life

Binaya Sapkota

Someone rightly said that life is journey and journey is life.Following this well-known saying, we decided to start our journey to a picturesque part and Gosaikunda became the spot of our choice.

Nepal is worldwide regarded as the resting zone of natural beauty. Gosaikunda is one of such mountainous regions of inexplicable beauty.

Our four-member-team started the journey on August 26, 2007 Sunday from IOM Boys' Hostel hoping to reach pious Gosaikunda by Tuesday on 'Janai Purnima'. Nirmal, Krishna, Deepak and I enjoyed every moment of the trip from hostel to Dhunche on bus and our enjoyment measured no bound. The journey was becoming adventurous since its commencement at Machhapokhari. As the bus was full of pilgrims because of Janai Purnima, We had no choice but to travel the bus on its hood.

The bends on the road somehow narrow but away from hustle and bustle of the city, the fast flowing stream of cold air on the hood, the difficulty in sitting, the funny conversation among friends, informative conversation with fellow passengers who were knowledgeable about the way, sceneries on the way- everything was very much memorable.

Gosaikunda was on everyone's lips and they were trying to elaborate us very minute details of the place. Do this; do not do this while

Gosaikunda; Photo by: Siddhartha

on the way- they taught us as if a teacher teaches his/ her students in the classroom. To our surprise, their tips helped us very much because we did not touch any flower on the way that is very much liable to cause altitude illnesses besides the height of the place itself.

The bus, full of passengers inside and on the hood, stopped suddenly on the verge of Dhunche due to the massive landslide that was the continuation of previous years' landslide. Therefore, we got off from the hood and walked for about half an hour to catch another vehicle on other side of the landslide. We could catch only a mini truck already full of people. Raining was the condition outside and crowded was the situation inside the truck. However, we reached Dhunche taking protection from a tent.

Next day, we made our trekking towards Chandanbari from Dhunche. We walked continuously without being halted by leeches on the way. I saw that large- sized and large number of leeches for the first time but I was free from being sucked as I adopted Odomus cream.

On the verge of Chandanbari, I became the victim of initial state of acute mountain sickness (AMS). I felt dizziness, headache and nausea. I had not taken any preventive measures (such as licking garlic and ginger) to prevent those symptoms until then. I then started at once and took a tablet of Acetazolamide. After taking a short rest there, we resumed our pace. It was raining heavily and we climbed the steep holy land by hook or by crook. We arranged our night midway between Louribina and Buddha temple under a tent roofing about 100 people. I was feeling difficulty in sleeping and was

suffering from dry cough. Therefore, I took cough syrup and slept but the action of Acetazolamide that I had taken on the daytime woke me up to micturate frequently and antagonized the sedative action of Diphenhydramine.

Third day was our target day to reach our destination because it was the day of 'Janai Purnima' and we had to exchange our old 'Janai' with a new one. We started our trip early in the morning at around 5 am, crossed Buddha temple, and reached on the verge of Gosaikunda. We had no stick with us as we had left it at Louribina and the steep was like Ghanaghasya (as indicated on our textbook of school days).

The sight of Bhairab Kunda on the way to Gosaikunda delighted us and we caught the scene on our camera.

The same morning we reached Gosaikunda, the picturesque religious place of 108 kundas. Thousands of pilgrims do come here twice every year- Dashain and Janai Purnima and our journey made us interact with many people and their culture.

We took a holy bath on the cold water of Gosaikunda. The bathing at the cold for some time was very much adventurous.

We met Dr. Mati Ram Pun, Dr. Santosh Kumar Dhungana, Dr. Suraj Parajuli and Nirmal Kharel there on a health camp who had come two days before us. After staying for few hours, we prayed to God Shankar who is believed to be the creator of Gosaikunda. According to our religious belief, He hit the wall of the Himalayan region with His 'Trishul' and drank cold water to pacify the burning sensation of 'Kalkut' poison coming from 'Samundra Manthan'. We also nullified our pains and sorrows with the pleasure of sacred bathing there.

We had also wished to go to Surya Kunda but our dilapidated condition of body did not support us. We returned the same way but felt very much difficult to run down the steep. We savored cheese, yak milk, local meat and other specialties of the location. We also enjoyed the cultural ceremony on the way. This closely embroiled us in the culture of local people.

On our way back to Dhunche, we faced yet another landslide and had no option other than walk.

After crossing the landslide, we had to face yet another setback, as no bus was willing to go from Dhunche to Kathmandu. Eventually, a bus driver agreed our request and started the bus. But about an hour after, the steering of the bus failed. My heart started pounding with that frightening moment but the driver saved our life with his skill. Luckily, we did not have to listen to the news of our accident! This was really an encounter with life and death. We thanked God Shiva and the driver for saving us from the probable accident. I correlated that potential accident with the real life experience that life is itself full of variety of experiences and encounters with various situations.

It was one of the encounters with life from the beginning to the end of the journey- traveling on bus hood, suffering from AMS, and nearly losing life on bus accident. When I think about those moments now, I become very much nostalgic of the days in Gosainkunda. Those were probably the best days of my life.

Our destination enabled us to confront with plethora of challenges in life. In this context, I found the trekking to Gosaikunda very much fruitful and memorable.

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Gosaikunda; Photo by: Siddhartha

SCOPE 2008

Subhash Khanal

Base of Everest; Photo from:ellis-brigham.com

"Doc, I had mild headache when I got up. It increase a little bit but its gone now. Would there be any problem with it?"

"Doc, I had one episode of loose stool in the morning and not there-after and I feel fine…"

"Doc, is this altitude sickness if I am having strange taste of cheese otherwise my appetite is quite well.."

"… coughed twice in the night…"

"I think I snore a lot in night at these altitude"

These were the kinds of reporting I used to receive every morning and all day long. I was privileged to be a part of "Everest Expedition trek SCOPE 2008" earlier this spring (err.. winter). It turned out to be a lifetime even for me from professional as well as personal aspect.

As team doctor, I had clearly instructed every team member to report any physical change or discomfort and even any unusual behaviour in close friends. So they were quite compliant in complaining. I had an insight to the importance of good counseling apart from prescribing. The more you spoke at first visit/complain, the lesser you had to in subsequent visits. Afterall, I experienced being followed up by the patients every minute round the clock for days. Sometimes, I went on talking beyond the listener's comfort as I too needed things to pass time (especially when not playing cards).

This spring (so early that it was almost winter), I had encountered what is known as freezing cold. Camping at khumbu region in February means sleepless nights due to fear of waking up frozen. I had lost sensation at the tip of my nose one morning, though temporarily. Temperature went below -15 degree Celsius some nights. So 'hats off' to those people who live their live there and thanks to those who managed blankets for me at few of the coldest places like Tenboche and Lobuche.

In spite of these challenges, there are scores of matters that urge one to visit the place again and again (though you think you won't during every trek): the ever standing beautiful mountains; the gorges; the river; the hardworking yaks and jos; and above all ever-smiling people with great hospitality.

The noble objective of this trek was that it was a charity mission dedicated to children with cerebral palsy. No one of the team was a professional trekker or a mountaineer. Hence, everybody had progressively worn down by the 'summit day' (the ultimate kalapatthar day). And returning back to Lukla was not an easy job either. So, this was no lesser than an expedition and this reminds me, it nearly correlated well with their banner that read: "Everest Expedition Trek SCOPE 2008"

One morning: "Doc I have slight abdominal discomfort with lost of gas, no vomiting, pain or loss of apetite…"

"….. (ruling out conditions needing immediate attention).. experts in mountain medicine refer to this as having HAFE…"

Dr. Subhash Khanal
Expedition Doctor
Everest Expedition Trek SCOPE 2008

MMSN News Desk

1. The ASCENT Study (ISRCTN91790322) is going on this fall in Khumbu! Dr. Siddhartha Yadav and Mr. Pradip Chapagain are participating in this research as co-investigators from MMSN.

2. HAPE prevention trial is finally in print. It has been published on " High Altitude Medicine and Biology". Most of the authors are from MMSN. Congratulations to all the authors and members who actively participated in the study.

3. The ultimate book in internal medicine, Harrison's Principles of Internal Medicine, has now added a new chapter on altitude illness in its online version. And it has been written by non other than Nepali High Altitude expert and MMSN President, Dr Buddha Basnyat. This, indeed, is a matter of extreme pride for MMSN and Nepal.

4. MMSN and HRA team conducted a health camp in Gosaikunda on the occasion of Janai Purnima. More than 600 patients took benefit of the camp. The medical team consisted of Dr. Saroj Neupane, Dr. Siddhartha Yadav and Dr. Ram Chandra Paudel. MMSN research on children was continued this year too by Ghan Bdr. Thapa. Dr. Subhash Khanal and Mani raj Neupane went there as co-investigators of another research study by Canadians, Mike and Jim.

5. Dr. Jhapindra Pokharel delivered a talk on altitude and medical help in the wilderness in a program organized by Trekking Agents Association of Nepal (TAAN) in Kakani.

6. MMSN president, Dr Buddha Basnyat, was in Philadelphia from June 20 to June 22 to talk about typhoid fever in South Asia. The program was organized by American Nepal Medical Foundation at the Radisson Hotel Valley Forge.

7. Dr Matiram Pun Volunteered in HRA's Manang and Thorang Phedi aid post for one and half month.

8. Dr Saroj Neupane went as research assistant to the Belgian High Altitude Physiology Research team at Pyramid of Khumbu (April 10 to April 26).

9. Dr Subhash Khanal went to Khumbu as expedition doctor for SCOPE 2008, a charity expedition for children with cerebral palsy. adventerous trek.

10. MMSN members took part in a workshop on 'How to write a scientific Paper' organized by Nepal Health Research Council (NHRC). Dr. Subhash Khanal, Rashmi Banjade and Maniraj Neupane took part in the workshop in February and Dr. Siddhartha Yadav, Dr. Saroj Neupane and Ghan Bdr. Thapa took part in the August workshop at Hotel De L' Annapurna.

11. Dr Shiksha Kedia and Dr Jhapindra Pokhrel from MMSN delivered training to the Porters in Pokhara in a program organized by HRA.

12. MMSN members Dr. Soni Srivastav and Dr. Sanjay Yadav took part in the Mountain and Wilderness Medicine World Congress 2007 held in Aviemore, Scotland. Dr. Buddha Basnyat gave talks, held a workhop and also had a poster presentation in the conference.

13. The SPACE trial was conducted in the khumbu region last year. Dr. Mati, Dr. Subhash Khanal, Dr. Anip and Dr. Ravishankar got the opportunity from MMSN to be a part of the trial as co-investigators.

14. Dr. Jhapindra Pokharel, Dr. Shiksha Kedia, Paras Parajuli and Maniraj Neupane from MMSN went to Gokyo in October last year as co-investigators in the Gokyo Acclimatization and Deacclimatization study.

15. Journal Clubs, our flagship, are being held at regular intervals. So far, there have been five journal clubs in 2008. Maniraj Neupane, Dr. Subhash Khanal, Dr. Ravi Shankar, Dr. Bibhuti Neupane, Smith Giri and Dr. Saroj Neupane were the presenters.