

A MEDICAL REPORT FOR THE WINTERING PERIOD OF 15th INDIAN ANTARCTIC EXPEDITION

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Medical Attendance

Antarctica is the direst, coldest and most isolated part of the globe. Prolonged exposure to isolation, extreme cold, long periods of light and darkness, restricted activity, lack of space and social cut-off, affect the human body as well as the mind. Apart from physical illnesses, of which the individual is aware, at times there are psychological stresses as well, of which a person may not be aware, but these are exhibited in his behaviour. Some then seek solace in drinks, thereby making their body system susceptible to more illnesses. At times it is reflected in their eating habits, which make them gain more than the desired weight, leading to more problems.

A total of 226 cases were attended to at Maitri station, during the 15th expedition-wintering period, between 1st March, 1996 to 4th January 1997. Most cases were minor ailments and responded well to treatment. Injuries constituted 63 cases (28%), of which 61 nos. were of minor nature requiring first aid and dressing only. There was delayed wound-healing in one case of incision for drainage of pus, following prolonged conservative treatment of ankle sprain. The reduction in the incidence of injuries is attributed to the fact that special emphasis was placed on prevention and safety measures, which have paid dividends.

Details of cases attended to, are as follows:

Serial No.	Diagnosis	No. of cases
1	GIT Cases	24
2	Helmenthesis	3
3	Atf Poisoning	1
4	Allergic Rashes	6
5	Dental	4
6	Oral Cavity	6

Serial No.	Diagnosis	No. of cases
7	Joint Pain	5
8	Dermatitis	10
9	Myalgia	14
10	Headache	8
11	Fungal Infection	5
12	Lumbigo	11
13	Malaria Recurrent	1
14	Folliculitis	1
15	Ent	2
16	Vertigo	3
17	Anorexia	2
18	Avitaminosis	1
19	Sinusitis	2
20	Anxiety Neurosis	1
21	Injuries	63

Cases of Special Interest

One case of contact dermatitis on the back and side of the chest was effectively treated but the nature of the antigen could not be identified. In yet another case, there was dermatitis of the hand dorsal surface not responding to local corticosteroid, was treated with systematic steroid. In this case also, the individual was from the EME working with different types of vehicular fuels, oils and lubricants. He was advised to avoid it but due to working conditions, it was not possible for him to avoid it.

One case of blunt injury to the eye leading to Subconjunctival haemorrhage was managed effectively with complete restoration of vision.

One case of repeated ankle sprain while on conservative management developed cellulitis and later frank pus.

The neighbouring Russian station, Novolazarevskaya, had a wintering team without a medical officer during 1996. The Indian Doctors attended to their medical requests also. The Leader of the Russian team was very grateful for the service provided by our Doctors and presented them with a special letter of thanks written by the Russian Arctic and Antarctic Research Centre.

Procedures Carried out

1. X-Ray - radiographs were taken in cases of limb-injury and the suspected case of bone tuberculosis.

2. Dental carries filling was done in 5 cases of our team and 10 cases of Russian team.
3. In one case incisional drainage for formation of pus in a case of ankle sprain was done.
4. Laboratory tests were done wherever required and within the limited means available.

Status of Expendable and **Non-expendable Medical Stores**

Medical stores and equipment were taken over from Sq. Leader Anantha, Medical Officer of the wintering team of 14th expedition. Stock of medicines and other expendable store is satisfactory. State of equipment and instruments for undertaking even an emergency major surgery is satisfactory, though space is the critical limiting factor. The following major equipment are available in the station and are in working condition : ECG machine, ECG automatic machine, BPL cardiac defibrillator cum monitor, Umider 15 ma portable x-ray machine, suction apparatus, Boyles Anesthetic apparatus field type, East Radcliffe respirator, Philips surgical diathermy apparatus and field type portable electric autoclave, autoanalyser for Biochemical analysis, a small refrigerator for storing life saving drugs. Empty cylinders of Nitrous Oxide and Oxygen have been sent back for refilling.

Recommendations

1. **Training** : All medical officers should be made fully conversant with basic techniques of radiology, blood transfusions, laboratory tests and dental procedures, by sending them well before the expedition, to these branches for a practical training as is done in case of EME and Engineers of Army. They should be acquainted with the various medical equipment available in station. In case, when there is no anaesthesiologist in the team, one of the medical officers should be sent for adequate training for at least 6 months, to enable him to deliver the goods in times of crises.
2. **Research** : There is a lot of scope for medical research in Antarctica. Presently the medical officers are being deputed to Antarctica in every expedition for the sole purpose of medical attendance to other expedition members. It is strongly recommended that a Central Antarctic Medical Research Cell be formed and all medical officers accompanying these scientific expeditions be made to participate actively in short term and long term medical research projects, in collaboration with different

branches of medical field research and physiologists from institution like DIPAS and AIIMS.

3. A realistic and economical approach to indenting for expendable stores is needed. This team has set an example by judiciously placing the indent this time.
4. Apart from other Antarctic stresses, the most important factor is the rather too long a stay and total lack of social contacts, which affect the psyche of the expedition members. Clear guidelines should be laid about moderate drinking habits. Drinking should be discouraged, and if at all resorted to, should be for socialising and not as a means of escape. In polar situations, mental make up assumes a much greater importance and it is for the Psychiatrists to weed out such individuals it during the screening process.