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FULFORD ORATION

LEPROSY IN THE INDIAN ARMED FORCES

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Introduction

I have chosen the subject for this oration, "Leprosy in Indian Armed Forces", for a few reasons. Firstly, to let this august audience know what is the problem of leprosy and what we are doing for this problem in the armed forces, because for years my colleagues in civil have been surprised whenever I speak to them on this subject, wondering as to why the soldiers should get leprosy at all, and from where do they get it. "What do you do to them?" "Do you throw them out?" and sometimes, "What do you service-dermatologists know of leprosy?" Believe me, these are the questions I have often been confronted with. Secondly, to tell you about some of the research aspects in the field of leprosy in the forces. And lastly, to convey a message to you and through you to others that whatever the armed forces are doing for the leprosy patients, can be done elsewhere also.

Our forces consist of men drawn from all the states of the country having varying endemicity of leprosy, from all religious sections having their own psycho-social background and from different economic strata. In India where leprosy is a major health problem, armed forces are bound to have a variable number of leprosy cases; healed, subclinical and active.

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Incidence rate of leprosy in our armed forces varied from 0.30 per thousand in 1972 to 0.56 per thousand in 1980, the maximum being 0.66 per thousand in 1979.[1] This increase was due to a higher case detection and better reporting by patients. For the same year 1980 the prevalence rate for our country was 5.52 per 1000.[2] Invalidment figures on account of leprosy considerably reduced after 1974 when the Government of India issued fresh policy instructions. I shall be touching this aspect a little later.

Regular medical examination at the unit level, of all the soldiers has greatly helped in early detection of leprosy cases. A few cases however, have been missed at times. Many obvious cases may unobtrusively enter the armed forces, particularly during an emergency when pre-recruitment medical examination is bound to be somewhat hurried.[3]

Classification adopted

At present, generally Ridley-Jopling spectrum is in practice in our leprosy centres. Although the records show that Madrid classification and that of Indian leprologists was also used.

Epidemiological and clinical aspects

I shall now be dealing with certain aspects of epidemiology and clinical presentation of leprosy that we noticed in a study of 1911 cases of leprosy.[4]

The frequency of occurrence, type-wise was: Tuberculoid (53.53%), lepromatous

(20.57%), borderline (11.67%), indeterminate (8.74%) and neuritic (5.49%).

The maximum number (88.55%) of leprosy affected soldiers were seen in the age group 20-39 years. Lowest reporting age was 18 years. This is because of the minimum age requirement for enrolment.

Majority (84.3%) patients had more than 3 years of service at the time of reporting, and the balance 15.7% either had subclinical or clinical infection at the time of enrolment or came in contact with the infection within 3 years of service. The question arises as to where did 84.3% patients having more than 3 years of service contact leprosy when only 0.57% had an index case in their family. History of contact was available in 2.25% cases only.

Maximum soldiers suffering from leprosy belonged to UP (17.11%), followed by Tamil Nadu (15.64%), Bihar (13.13%), Maharashtra (11.25%) and Andhra Pradesh (7.95%).

Almost 80% cases presented with skin lesions and anaesthesia. Seventy eight cases reported for symptoms unrelated to leprosy, but were detected on clinical examination only. Leprosy lesions were seen on almost any part of the body.

Ulnar nerve was the most frequently affected nerve (48.77%), followd by lateral popliteal and greater auricular nerves.

Deformity

In another study of 809 cases, we found a total of 74 patients with deformities.[5] The deformity rate was 9.14% only, as against 25-30% in the general population. Sixty two patients had some kind of a deformity prior to commencement of the treatment and 13 developed these while on DDS therapy. Thus only 1.5% of a total 747 cases who did not have deformities at diagnosis, developed them on treatment. Deformities were more common (28.33%) in neuritic type and none was seen in those diagnosed as maculo-anaesthetic leprosy. Total number of deformities were 78 in 74 patients. Four patients had more than one deformity involving hands and feet. Claw hand was the most frequent amongst them.

Diagnosis, treatment and disposal

We have seven leprosy treating centres, of which 3 are main, accommodating all types of leprosy. These 3 centres at Pune, Agra and Barrackpore also provide domicilliary antileprosy treatment to ex-servicemen.

Suspected cases of leprosy are sent to one of the leprosy treating centres where they are investigated and treated. Non-infectious cases are treated for a maximum period of 12 months institutionally and then sent back to service. Infectious cases are invalided out of service and then kept in hospital till they become bacteriologically negative but for a maximum period of 2 years. Recently, there has been a re-thinking and fresh proposals are under active consideration of the government to give benefit of a certain period of treatment in the hospital before considering invalidment.

Multi-drug therapy

In the armed forces leprosy centres, all cases of leprosy are treated with multi-drug therapy. WHO recommendations with modification of the Government of India have been followed. The only difference is that all patients undergo completely supervised treatment initially. Following are the drug schedules used :-

Multibacillary leprosy

Rifampicin	600 mg	
Clofazimine	100 mg	daily for 14 days,
DDS	100 mg	

Followed by pulse regimen :

Rifampicin	600 mg	once a month,
Clofazimine	300 mg	

Clofazimine	100 mg	alternate days
DDS	100 mg	daily

Paucibacillary leprosy

Rifampicin	600 mg	once a month
DDS	100 mg	daily

In a recent study we presented our observations on MDT in 50 hospitalised cases of leprosy,[6] 76% were paucibacillary and 24% were multibacillary cases. Routine investigations for MDT were done initially and during therapy. Seventy six per cent cases belonged to high endemic areas. Thirteen cases experienced reaction during treatment, type I in 10 and type II in 3. Seventy per cent of the paucibacillary cases took more than six months to exhibit subsidence of activity. In 13 multibacillary cases the activity subsided by 18 months.

Electron microscopy studies

In some cases we have been observing effects of MDT ultrastructurally also. The specimens were collected before treatment and at day 7 and 15 after initiation of therapy. Bacterial destruction was evident at day 7.

Institutional facilities

At 7 leprosy centres the following facilities exist:

(a) Staff: Dermatologist trained in leprosy, and Special Treatment Assistants.

(b) Laboratory: Bacteriology and histopathology

(c) Others: Physiotherapy, Reconstructive surgery (4 centres), and immunology (Armed Forces Medical College)

Rehabilitation

Vocational training centres (VTC) have been opened at 3 of our leprosy centres which impart training in tailoring, typing and watch repairing. In addition, the centre at Agra also has facilities for radio repairing, knitting and canning. Having personally interviewed many ex-servicemen leprosy patients trained at VTCs, I was told that the disease came to them as a blessing in disguise because they were financially better than before, when they were in service.

Research activity

With whatever time and resources are available at their command, the service leprologists have been engaged in some research work. I shall briefly highlight a few of them.

An instrument was designed and developed by Tutakne et al for quantitative assessment of thermal sensory perception. It is named as 'Thermosense'. We find it very useful in doubtful sensory deficit and during follow up on therapy. A few papers have already been published on this subject.[7, 8]

Currently, we are developing some artificial aids for use by leprosy patients, under the Armed Forces Medical Research project. Some such aids are portable, pocket-size, transcutaneous nerve stimulator, finger straightner, polypropylene splint for claw hand etc.

In addition, some work has also been done on immunoglobulins in leprosy,[9] dermatoglyphics in leprosy[10] and modified pilocarpine test.[11]

Leprosy teaching

This is one field where we are deeply interested. I am proud to say that teaching of leprosy to the undergraduates at Armed Forces Medical College, Pune is much better than at any other institution. There is no professional reorientation course for medical Officers in which leprosy is not included. At the postgraduate level in dermato-venereology, leprosy occupies one third of the curriculum.

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