



Leprosy-Post elimination phase- Still a public health challenge in India

KEYWORDS

Elimination, health workers, siblings, socio-economic status, madarosis, stigma

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ABSTRACT *Leprosy is a slowly progressive, chronic infectious disease. It is a very serious, mutilating and stigmatizing disease in many parts of the world and early diagnosis and therapy is the most important strategy for its control. A 7 year & 6 months male child belonging to the Adivasi Kaatkari family belonging to lower socio-economic class from Raya village, under Sub-Centre Raya, Taluka & Kalyan, District Thane under the Rural Health Training Centre, Khadavali came with his father & two siblings in June 2013 with the complaints of hypo-pigmented anesthetic patches on back & reddish raised patches on forehead & madarosis since one & half months. Intervention at an early stage will avoid the onset of the more serious signs and symptoms. Efforts must be made to alert population at risk and all health workers about the importance of an early diagnosis and treatment.*

Rationale of the Study-

Leprosy is a chronic inflammatory disease of skin and peripheral nerves. Elimination of leprosy as a public health problem was reached at the global level in the year 2000 and by India on 31st December, 2005. Pockets of high endemicity with prevalence rate of > 1 still exist in many states. ⁽¹⁾This case was selected because it was a missed case to be diagnosed by community health workers at grass root level during their home visits. He had the above symptoms since one & a half months. Even, Leprosy in children is suggestive that the disease is active & spreading and it is an indicator of recent transmission of the disease. A persistently high childhood proportion signifies ongoing transmission in general population⁽¹⁾

He had two siblings and both had hypo pigmented anesthetic patches. His father aged 28 years being a security guard by occupation, had past history of Leprosy treated for 1 year some 15 years back. He was having complaints of oily fore-head skin with nodularity of the skin of the bilateral pinna since 5-6 months with a tingling sensation in both lower limbs.

4 members of the same family was found to be affected only by contact tracing and detailed examination.

Case 1 (Index case)- 7 year and 6 month old male child

Under good natural daylight & with the permission of the father of the patient detailed physical examination was done. The below findings were noted from head to toe-

- Raised erythematous 2*3 cm lesion on the forehead towards left side & similar lesion on right side of the face with loss of sensation to pain & touch, cold & heat.
 - There was loss of hairs (madarosis) on lateral 1/3rd of left eyebrows
 - 3 Hypo-pigmented patches were seen on back with loss of sensation to pain & touch, cold & heat.
 - 2 hypo-pigmented patches seen on right forearm.
- Left Ulnar nerve was thickened & palpated near medial epicondyle

No other nerves were palpable. No paresis or weakness of any muscles, no deformity or disability seen

The child was started on Multi Bacillary –Multi drug treatment (MDT) (Children) for 1 year- as classified as Multi bacillary Leprosy as per Clinical classification by WHO under National Leprosy control program

Case 2-6 years old male child (Younger sibling of index case)

2 Hypo-pigmented patches were seen on chest wall with loss of sensation to pain & touch, cold & heat.

No nerve involvement or any other deformities.

This child was started on Pauci-Bacillary –MDT (Children) for 6 months- as per Clinical classification by WHO under National Leprosy control program

Case 3- 4 years and 6 month old female child (Younger sibling of Index case)

2 Hypo-pigmented patches were seen on face (Right cheek) with loss of sensation to pain & touch, cold & heat.

No nerve involvement or any other deformities.

This child was started on Pauci-Bacillary –MDT (Children) for 6 months- as per Clinical classification by WHO under National Leprosy control program

Case 4- 28 years male (Father of Index case)

- Oily and nodular forehead skin
- Nodularity present on skin of bilateral pinna
- Tingling sensation on both lower limb.

No hypo-pigmented or anesthetic patch seen and no palpable peripheral nerve

This person was started on Multi-bacillary-Bacillary –MDT for 1 year- as per Clinical classification by WHO under National Leprosy control program

Discussion:

The transmission of leprosy occurs from individual to individual, between lepromatous and borderline patients and healthy individuals. Higher risks are associated with living in the same place as an untreated patient positive for acid-fast bacilli.^(2,3) The routes of elimination of the microorganism are mainly the upper airway and lesioned areas of the skin.⁽³⁾ The bacillus is highly infectious, but presents low pathogenicity and virulence, that is, many people are infected, but few get sick. The rate at which leprosy spreads depends on the susceptibility of the individual and the opportunity of contact with the microorganism.⁽⁴⁾ The host's innate response is what determines the clinical manifestation of the disease. Contact with infected patients does not always result in transmission of the disease, and different individuals exposed to the same infected case develop different clinical forms.⁽²⁾

There is a correlation between cases of multi-bacillary leprosy in children, the endemic situation of the country, and late diagnosis. The disease is mainly transmitted to children through close family contacts. The younger the child, the greater the number of infected individuals found among the family members.⁽¹⁾

In the year 2011 a total of 219,075 new leprosy cases were registered in the world, of whom 127,295 were in India.⁽⁵⁾ Among the new cases detected in India, approximately 3 per cent have grade 2 disability, referring to the presence of visible (and often permanent) deformity. It has been estimated that in 2015 there will be nearly 500,000 people living in India with grade 2 disability due to leprosy.⁽⁶⁾

The goal of elimination of leprosy as a public health problem as defined by the World Health Assembly i.e., attaining a level of prevalence of less than one case per 10,000 population, was reached at the global level in the year 2000. This was followed by the "Strategic Plan for Leprosy Elimination 2000-2005" and the "Global Strategy for Further Reducing the Leprosy Burden and Sustaining Leprosy Control Activities 2006-2010" with the main intention of ensuring program sustainability by reducing reliance on vertical infrastructure and promoting integration within the General Health-Care System (GHS). The "Enhanced global strategy for further reducing the disease burden due to Leprosy: 2011-2015" also focuses on sustaining the gains made so far.⁽⁷⁾

Recommendations:**Need for proper integration of Leprosy case detection and management in General Health services-**

- Though National Leprosy Eradication program is a horizontal program but still it is highly missed disease during the examination of a patient.
- To diagnose a case, the health care professionals should have a trained eye and experience so that no case will be missed.
- More focus given on the other high burdened disease screening rather than screening of leprosy.

Insufficient training of the health workers-

- Grassroot level functionaries, e.g., village dais. Village Health Guides, Auxiliary Nurse Midwives, Anganwadi workers, village extension workers, primary school teachers. Gram Panchayat staff, etc. will play facilitator and supportive role for generating the necessary momentum for the leprosy control program, therefore the inter-personal communication for which the grass-root level workers will have to be trained and effectively utilized.

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- There is also need for training of doctors for early detection of cases ("Eyes sees only what brain knows")
- Only when physicians, other health workers, and the population in endemic countries become fully aware of, and able to recognize, the disease in its initial phase, will it be possible for therapy to be instituted at the very beginning.

Need for focus on screening of each and every contacts of the case:

This always remained an unattained step in Leprosy eradication program. Due to poor contact screening the disease kept on flourishing in community with increased transmission rate.

Active surveillance should be focussed.

- Need to strengthen the Health Education component:
- Health Education should be directed towards the patient and his family and the general public. The patient and the family should be educated about the need for regular treatment, repeated examination of contacts, self-care regarding the prevention of disabilities and protection of children.
- Generating an awareness among people that leprosy is curable, not all leprosy patients are infectious, regular and adequate treatment is essential to obtain cure and prevent disabilities, and that the patient needs sympathy and social support.
- It should be impressed upon them that leprosy is not hereditary, casual contact with a patient does not cause leprosy. This can help remove some of the social stigmas associated with the disease. Health education aims at ensuring community participation in order to achieve the objective of leprosy eradication.
- It is been recognized that technological advances alone cannot solve the leprosy problem, unless we succeed in involving the public in the control program.

Socio-economic considerations in the control of leprosy-

- Although treatment of leprosy is one of the ways to control its spread, more importantly, tackling the most basic issues such as population control, improvement in living conditions of the underprivileged, basic education about the diseases, and dispelling the myths associated with the disease are more important issues.
- Preventing contact with infectious cases is an accepted method of controlling the spread of any communicable disease. It is difficult to envisage effective leprosy control without a significant improvement in the socio-economic conditions of the affected communities. The economic and social problems of the patient and his family should be identified and met.

Conclusion:

Leprosy continues to be a communicable disease of public health concern in the post-elimination era. The unturned curves in the epidemiology of childhood leprosy in its endemic pockets which mirrors active transmission and delayed diagnosis in this age group. This alarms the need to strengthen contact screening, early case detection, and referral activities in the paediatric population to sustain elimination.

In addition to building the medical task force and strengthening the existing one, increased community awareness utilizing Information, Education and Communication (IEC) activities at all levels and in all states with more emphasis on endemic states should be launched. The message

should be in local language to be more effective. In addition, issues relating to stigma, discrimination and rehabilitation need to be tackled in a more integrated and inclusive manner to realize the dream of leprosy-free India.

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