LEPROSY

Based on the MoH Communicable Diseases Control Manual 2012[1]

Associated Documents

Case Report form:
G:\Division\CPH\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Leprosy\FormsStdLettersQuest\Generic_Dec2013.pdf

Fact Sheet:
https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual/leprosy

The Illness[2-4]

Leprosy (otherwise known as Hansen's Disease) is a chronic infection caused by the bacteria *Mycobacterium leprae*. It is found predominantly in tropical areas in varying degrees of prevalence in Africa (Democratic Republic of Congo, Ethiopia, Madagascar, Mozambique, Nigeria, United Republic of Tanzania) Asia (Bangladesh, India, Indonesia, Myanmar, Nepal, Philippines, Sri Lanka) and the Americas (Brazil). It is also found in some Pacific Island states.

It can be considered two connected diseases that primarily affect the skin and peripheral nerves. *Mycobacterium leprae* has not been cultured in vitro. Leprosy can occur at any age but in developing countries the age-specific incidence of leprosy peaks in children younger than 10 years, who account for 20% of cases.

Historically the effects of leprosy with its consequences and highly visible debilities have resulted in severe social and psychological stigma. To minimize the prejudice the condition is also known as Hansen's disease, named after G.A. Hansen, who discovered the bacillus in 1873.

WHO figures from 138 countries show the global registered prevalence of leprosy to be approximately 176,000 cases at the end of 2015. During the same year 212,000 new cases were reported.

Leprosy is rarely fatal. Although both lepromatous leprosy and tuberculoid leprosy (see Clinical description below) involve the skin and peripheral nerves, tuberculoid leprosy has more severe manifestations. Nerve involvement results in loss of sensory and motor function, which may lead to frequent trauma and amputation. The ulnar nerve is most commonly involved.

In 1991 the World Health Assembly passed a resolution to "eliminate" leprosy as a public health problem by the year 2000. Elimination of leprosy is defined as a registered prevalence rate of less than 1 case per 10 000 persons. The target was achieved on time at a global level. The widespread use of multi-drag therapy and the reduction in duration of treatment dramatically contributed to this reduction:

- Over the past 20 years, more than 16 million leprosy patients have been treated.
- The prevalence rate of the disease has dropped by 99%: from 21.1 cases per 10 000 people in 1983 to 0.2 cases per 10 000 people in 2015.
- A dramatic decrease has been achieved in the global disease burden: from 5.2 million people with leprosy in 1985, to 176,000 people at the end of 2015.
- With the exception of few countries (with populations of less than 1 million), leprosy has been eliminated from all countries.

Access and delivery of antibiotics continues to be a problem in the most endemic nations. With the precise transmission mechanism of leprosy still unknown and a lack of an effective vaccine, leprosy will continue to pose an ongoing public health problem in the coming decades.

Epidemiology in New Zealand[5]

All cases of leprosy in New Zealand have occurred in individuals who have contracted the disease overseas. In 2015, five cases were notified in New Zealand and in 2014 there were four cases. Ages ranged from 10-14 years to over 70 years. The countries lived in or visited by the cases were Kiribati, Philippines, Nepal and Thailand.

CASE DEFINITION

Clinical description

A chronic bacterial disease characterised mainly by the involvement of skin and peripheral nerves. Clinical forms represent a spectrum reflecting the cellular immune response to *Mycobacterium leprae*. Anaesthetic skin lesions and nerve enlargements are characteristic of the disease. The disease includes:

- tuberculoid leprosy: a few anaesthetic skin lesions and peripheral nerve abnormalities
- borderline leprosy: skin lesions characteristic of both tuberculoid and lepromatous forms
- lepromatous leprosy: widespread erythematous papules and nodules with facial and aural infiltration, often accompanied by both individual peripheral nerve abnormalities and a symmetrical peripheral neuropathy.

Note: The World Health Organization classifies leprosy as multibacillary or paucibacillary based on the number of skin lesions and the presence or absence of bacteria found in skin smears. This classification determines the duration of multi-drug chemotherapy.

Incubation: Very lengthy, ranging from 9 months to more than 20 years with an average of 4 years for tuberculoid leprosy and 8 years for lepromatous leprosy.

Transmission: Humans are the only significant reservoir. Infection probably spreads predominantly from nasal secretions to the skin and respiratory tract of another person. Other respiratory secretions and open-skin lesions may also transmit infection. Transmission requires close contact. Although the bacillus can survive up to 7 days in dried nasal secretions, indirect transmission is thought unlikely. Transplacental transmission is probably responsible for cases under 1 year of age.

Communicability: Most cases treated with multi-drug regimens cease to be infectious within 1 day.

Prevention: In endemic countries, prevention (and management) requires a sustained political commitment to ensure quality clinical diagnosis and treatment, active case-finding, comprehensive contact tracing and community education.

Notification Procedure

To be notified immediately on suspicion. Notification should not await confirmation.

On receiving a notification, the medical officer of health should immediately notify the Director of Public Health at the Ministry of Health.

Case classification

Under investigation: A case that has been notified, but information is not yet available to classify it as probable or confirmed.
Probable: A clinically compatible syndrome that lacks laboratory confirmation.
Confirmed: A clinically compatible syndrome that is laboratory confirmed.
Not a case: A case that has been investigated and subsequently found not to meet the case definition.

Laboratory Testing

Laboratory confirmation requires at least one of the following:

- demonstration of acid-fast bacilli in biopsy tissue or slit-skin smears
- a biopsy with characteristic pathological changes.

Management of Case

Investigation

- Fax the 'Generic' Case Report Form to the notifying doctor for completion.
- Record laboratory details of the diagnosis (in consultation with the infectious disease physician, ensure laboratory confirmation of diagnosis where possible).
- Check that a history of travel has been obtained and identify possible contacts.

Restriction

Nil.

Treatment

- Cases should be under the care of an infectious diseases' physician.
- Multidrug regimens (rifampicin, dapsone, and clofazimine) are long and vary from six months to two years depending on the type of leprosy.
- Failure of the patient to attend appropriate treatment should be reported to the MOH and the MoH.

Counselling

- Advise the case and their caregivers of the nature of the disease and its mode of transmission.
- Open skin lesions should be covered
- A fact sheet is available: https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual/leprosy

Management of Contacts

Definition
All people who have been in close contact with a case of leprosy (especially lepromatous leprosy) over a prolonged period.

Investigation
Refer contacts to an infectious diseases specialist for examination and follow-up. The MOH is to be informed if a contact fails to attend.

Restriction and prophylaxis
Nil.

Counselling

- Advise contacts to have an initial examination and periodic subsequent examinations by a medical practitioner to detect early signs of disease.
- Advise all contacts of the incubation period and typical symptoms of leprosy. Encourage them to seek early medical attention if symptoms develop.
- A fact sheet is available: https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual/leprosy

Other Control Measures

Identification of source
Check family (close contacts to be referred to an Infectious Diseases physician) and check travel history.

Disinfection
Nil.

Health education
Nil.

Reporting

- Ensure complete case information is entered into EpiSurv.
- On receiving a notification, medical officer of health should immediately notify the Director of Public Health at the Ministry of Health.
- File.

References and further information

1. NZ Communicable Diseases Control Manual 2012, Leprosy, https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual
2. Medscape, Reference, Infectious Diseases, Skin and soft tissues infections, Leprosy http://emedicine.medscape.com/article/220455-overview

3. CDC Atlanta, Hansen's disease (leprosy) fact sheet, Updated Feb 10, 2017 https://www.cdc.gov/leprosy/about/about.html
4. WHO, Leprosy fact sheet, Updated 2017. http://www.who.int/mediacentre/factsheets/fs101/en/
5. Notifiable And Other diseases in New Zealand: Annual Surveillance Reports 2015 https://surv.esr.cri.nz/PDF_surveillance/AnnualRpt/AnnualSurv/2015/2015AnnualReportFinal.pdf