

Rare Diseases 2019: Observation of clinical and laboratory profile of leprosy cases detected by microscopy in south west Bihar: A hospital based study- Prabhat Kumar- Narayan Medical College and Hospital

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Introduction: Nearly 14 years after leprosy was eliminated from India, many continue to be infected with the lepra bacilli. Leprosy is a chronic infectious disease that primarily affects the peripheral nerves, skin, upper respiratory tract, eyes and nasal mucosa. The disease is caused by *Mycobacterium leprae*. The leprosy elimination campaign sponsored by the World Health Organization has successfully reduced the prevalence rate of the disease to less than one case per 10,000 populations worldwide, but the number of new cases in endemic countries has increased so we undertake to this study to know the trend of leprosy in our tertiary care hospital.

Leprosy is a long-term infection of the bacteria *Mycobacterium leprae* or *Mycobacterium lepromatosis*, also known as the Hansen's disease (HD). Infection can cause nerve, respiratory tract, skin, and eye damage. This nerve damage can lead to a lack of ability to experience pain, which can result in the loss of sections of a person's extremities from repetitive trauma or infection due to untreated wounds. An infected person can also suffer muscle weakness and poor vision. Symptoms of leprosy may start within one year but symptoms may take 20 years or more for some people to occur. Though extensive contact is necessary, leprosy is spread among people. Approximately 95 per cent of people who contract *M. Disease leprosy* does not develop. Spread from a person's nose infected with leprosy is thought to occur through a cough or contact with fluid. Genetic factors and immune function play an important role in how easily a person can catch the illness. During pregnancy, leprosy does not spread to unborn children or by sexual contact. Spread from a person's nose infected with leprosy is thought to occur through a cough or contact with fluid. Genetic factors and immune function play an important role in how easily a person can catch the illness. During pregnancy, leprosy does not spread to unborn children or by sexual contact. Leprosy occurs more frequently among poor people. The two major disease types – paucibacillary

and multibacillary – vary in the number of bacteria present. A person with paucibacillary disease has five or fewer patches of numb skin that are poorly pigmented whilst a person with multibacillary disease has more than five patches of skin. The diagnosis is confirmed by having acid-fast bacilli found in a skin biopsy. Leprosy is curable through multidrug treatment. Paucibacillary leprosy therapy lasts for six months with the medications dapson, rifampicin, and clofazimine. Multibacillary leprosy therapy requires 12 months of the same drug. They may also use a number of other antibiotics. The World Health Organization provides those treatments free of charge. Leprosy people may live with their families and go to school and work. There were 209,000 cases of leprosy worldwide in 2018, down from 5.2 million in the 1980s. The number of new cases had been 216,000 in 2016. Most of the new cases take place in 14 countries, with India accounting for over half. In the 20 years from 1994 to 2014, leprosy cured 16 million people worldwide. Approximately 200 cases are reported in the USA each year.

Common symptoms present in various types of leprosy include a runny nose; dry scalp; eye problems; skin lesions; muscle weakness; reddish skin; smooth, shiny, diffuse thickening of facial skin, ear, and hand; loss of sensation in fingers and toes; thickening of peripheral nerves; a flat nose caused by nasal cartilage destruction; phoning and sound resonance during speech. Leprosy can have different effects on people. The average period of incubation is for 5 years. People may begin to notice symptoms within the first year or up to 20 years after infection. The first noticeable sign of leprosy is often the development of pale or pink colored skin patches that may be temperature- or pain-insensitive. Patches of discolored skin are sometimes accompanied or preceded by nerve problems including numbness or tenderness in the hands or feet. Secondary infections (additional bacterial or viral infections) can lead to tissue loss, causing fingers and toes to shorten and deform, as cartilage is absorbed into the body.

Approximately 30 per cent of people with leprosy have nerve damage. The sustained nerve damage is reversible when treated early, but is permanent after a period of several months until adequate care is resumed. Nerve damage can cause loss of muscle function, resulting in paralysis. Leprosy transmission occurs during intimate contact with those infected. Leprosy transmission is not well understood but it is thought that the upper respiratory tract is the most likely entry route. Older research indicated skin as the main transmission path, but more recent research has favored the respiratory path. Leprosy is not transmitted sexually, and is not spread to the unborn child through pregnancy. The majority of people (95 per cent) exposed to M. Leprosy does not develop; casual contact like shaking hands and sitting next to someone with leprosy does not result in transmission. People are deemed 72 hours after beginning effective multidrug therapy to be non-infectious. M. Two exit routes. The frequently described human body leprosy is the skin and nasal mucosa, although its relative importance is not clear. Lepromatous cases show large numbers of organisms deep in the dermis but it is doubtful whether they reach the surface of the skin in sufficient numbers.

Method: This was a cross-sectional study carried out over a period of six months from August 2018 to January 2019 in Narayan Medical College and Hospital Jamuhar Sasaram. Samples were obtained from patients who attended the dermatology department of NMCH Jamuahr Sasaram with history suggestive of leprosy. The slit skin smear was obtained as per standard protocol and then sample were subjected to modified (5%) Ziehl- Neelsen Staining for direct microscopy and result were observed under oil immersion.

Result: A total of 36 slit skin smear were processed of which 21(53%) patents presented with nodular lesions and 15 patents with hypo pigmented patch. Out of 21 (53%) nodular lesions 8 (38%) were showed lepra bacilli in microscopy with bacterial index of 6+.

Conclusion: Leprosy is one of the oldest diseases known to man. Despite advances in medical science, leprosy continues to be a public health challenge in countries like India. Our study showed 22% of leprosy cases in our hospital which showed increasing number of cases in this hospital. Continuous surveillance is by

far the best strategy to reduce the incidence rate of leprosy in the future.