

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, India

Abstract

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.

Introduction: Leprosy also called Hansen's disease is one among the oldest disease known to mankind. It is a chronic infectious disease caused by *Mycobacterium leprae*. It still remains as a major public health problem facing India. Nearly, 60% of all world leprosy cases are reported from India. The spectrum of presentation of leprosy is very wide. Histopathology is an important tool in making a definitive diagnosis. The objective of the study is to explain the histopathological profile of leprosy within the state of Bihar. **Aim:** to review the histopathological spectrum of leprosy at a tertiary care centre of Bihar. **Material and methods:** A retrospective hospital study of clinically diagnosed leprosy cases was conducted over a period of 28 months (January 2015 to April 2017). The lesional skin biopsies obtained were fixed, treated and stained with hematoxylin and eosin (H&E) followed by Ziehl-Neelsen staining (ZN). The lesions were classified under microscopy according to the Ridley-Jopling classification. **Results:** A total of 200 cases were studied. The highest incidence was observed in 11 to 30 year-olds for men and women. Males were more affected (M:F=2.4:1). Most common clinical feature was loss of sensation. The most frequently reported histopathological type was borderline lepromatous (43%) followed by borderline (17%). Overall ZN staining was positive in 56 cases (28%). **Conclusion:** The spectrum of presentation of leprosy is extremely wide and there is clinical overlap between different types of leprosy. Histopathology still remains the gold standard for early diagnosis and classification of the disease. Accurate diagnosis forms the backbone for appropriate treatment and preventing deformities and drug resistance. The clinical manifestations of leprosy are so varied and diverse and can mimic kind of unrelated diseases, so for the right and adequate treatment, the diagnosis must be made early and it should be accurate, therefore clinic-pathological correlation is extremely important in patient care. **Aims:** To categorize Leprosy into various types supported microscopy and to correlate with clinical presentations. **Materials and Methods:** The data base of Department of Pathology, Dr. S. N. Medical College, Jodhpur was reviewed and total 423 clinically diagnosed leprosy patients of all age groups were included within the study. **Results:** a complete 423 clinically diagnosed leprosy cases evaluated histopathologically. On clinical diagnosis most 74(17.5%) of the cases belonged to Borderline Borderline (BB) leprosy similarly, On histopathological study Borderline borderline (BB) subtype of leprosy was found most 106 (25.06%) common among all subtypes of leprosy and overall Clinico-histopathological agreement was seen in 266 (62.9%) cases and disagreement in

157(37.1%) cases. **Conclusion:** The discordance between clinical and histopathological diagnosis was noticed because the clinical diagnosis was made on the idea of Ridley-Jopling classification, even when a histopathological examination had not been made. So rather than using single criterion to diagnose leprosy, the researcher need to consider other contributory factors like involvement of nerve, skin adnexae, epidermal atrophy, Grenz zone, erosion of the epidermis, granuloma (epithelioid/macrophage) and bacteriological index to reach a definitive.

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 Jamuhar Sasaram with history implicational 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 complete of 36 slit skin smear were processed of which 21(53%) patients presented with nodular lesions and 15 patients with hypo pigmented patch. Out of 21 (53%) nodular lesions 8 (38%) were showed lepra bacilli in microscopy with bacterial index of 6+. A total 423 clinically diagnosed leprosy cases evaluated histopathologically. On clinical diagnosis most 74(17.5%) of the cases belonged to Borderline Borderline (BB) leprosy similarly, On histopathological study Borderline borderline (BB) subtype of leprosy was found most 106 (25.06%) common among all subtypes of leprosy and overall Clinico-histopathological agreement was seen in 266 (62.9%) cases and disagreement in 157(37.1%) cases.

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.

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Reference links

<https://www.omicsonline.org/proceedings/observation-of-clinical-and-laboratory-profile-of-leprosy-cases-detected-by-microscopy-in-south-west-bihar-a-hospital-based-study-106893.html>

[https://www.researchgate.net/publication/280961460_A_study_of_Clinico-](https://www.researchgate.net/publication/280961460_A_study_of_Clinico-histopathological_correlation_of_leprosy_in_a_tertiary_care_hospital_in_western_district_of_Rajasthan)

[histopathological correlation of leprosy in a tertiary care hospital in western district of Rajasthan](https://www.researchgate.net/publication/280961460_A_study_of_Clinico-histopathological_correlation_of_leprosy_in_a_tertiary_care_hospital_in_western_district_of_Rajasthan)

E-mail: prabhatasha@gmail.com