



“A CLINICO PATHOLOGICAL STUDY OF LEPROSY IN TERTIARY CARE HOSPITAL OF PATNA BIHAR ”

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ABSTRACT **Introduction:** Leprosy (Hansen's disease) is a chronic disease caused by Mycobacterium leprae, infectious in some cases, and affecting primarily the peripheral nervous system and then skin, and certain other tissues. **Objective:** To document clinical and histopathological features of type 1 and type 2 lepra reactions observed in study population. **Materials and Methods:** Present study was carried out in patients attending the Out patient and Inpatient, Department of Skin & VD Patna Medical College & Hospital, Patna from December 2017 to August 2018. 63 patients of leprosy in reaction belonging to all age groups and both sexes were randomly selected and included in the study after taking their consent. **Results:** Out of total 63 patients, 26 patients were of Type 1 reaction while 37 of Type 2 reaction. Among 26 type 1 reaction patients 21 were of Borderline Tuberculoid, 3 of Mid Borderline while 2 were of Borderline Lepromatous, thus BT patients had higher incidence of type 1 reaction. Among 37 type 2 patients 23 were of lepromatous leprosy while rest 14 of borderline lepromatous. **Conclusion:** In the present study prevalence of type 2 lepra reaction was higher than type 1 lepra reaction. In the present study age of youngest patient was 9 years while of oldest one was of 76 years. Mean age of study sample was 41.8 years. Maximum patients belong to age group 41-60 years closely followed by age group 21-40 years

KEYWORDS : Erythema nodosum leprosum, lepra reaction, leucocytosis, Henson disease.

INTRODUCTION

Leprosy (Hansen's disease) is a chronic disease caused by Mycobacterium leprae, infectious in some cases, and affecting primarily the peripheral nervous system and then skin, and certain other tissues.¹ This crippling is not only physical but more importantly, mental, social and occupational also. It is an ancient disease of mankind associated with many myths, stigma and social discrimination.

Once widely disseminated, Hansen's disease is mainly contained nowadays in resource-poor tropical and temperate regions. The adoption of goal of elimination of leprosy as a public health problem by the year 2000 by WHO.¹ Its prevalence has reportedly declined all over the world, but six countries including India are still epidemic for the disease. India alone contributes about 60% to the world's leprosy case load, with major share from its northern states.² 1966, Ridley and Jopling created a classification, based on polar forms, with Tuberculoid (TT) at one end, Lepromatous (LL) at the other end, and three types of borderline leprosy in between: Borderline Tuberculoid (BT, immunocompetent end), Borderline Borderline (BB, in the middle), and Borderline Lepromatous (BL, immunodepressed end).³ Leprosy reactions are immunologically mediated episodes of acute or subacute inflammation which interrupt the natural course of disease affecting the skin, nerves and others tissues. Reactional states are divided into two forms, called type 1 and type 2 reactions. **Type 1 reactions** are delayed hypersensitivity reaction associated with sudden alteration of cell-mediated immunity.⁴ **Type 2 reaction (Erythema nodosum leprosum)** is an immune complex syndrome and occur in lepromatous patients (BL, LL). It is a type 3 hypersensitivity reaction.⁵

OBJECTIVE

To document clinical and histopathological features of type 1 and type 2 lepra reactions observed in study population.

MATERIALS AND METHODS

Present study was carried out in patients attending the Out patient and Inpatient, Department of Skin & VD Patna Medical College & Hospital, Patna from December 2017 to August 2018.

METHOD OF COLLECTION OF DATA:

63 patients of leprosy in reaction belonging to all age groups and both sexes were randomly selected and included in the study after taking their consent. In each case detailed history, thorough general physical, local and systemic examination with reference to epidemiology and

clinical features of leprosy reactions were done. In all cases necessary investigations and skin biopsy for histopathological examination was done with their consent.

Selection Criteria

Inclusion Criteria

- Clinically diagnosed case of lepra reaction type 1 or 2 having fresh episode.

Exclusion Criteria

- Patient not willing to participate in study.
- Patient currently on any immunosuppressant drugs or taking medication for previous episode of Reaction.

RESULTS

Table-1: Clinical features of type 1 reaction patients

In the present study most of type 1 reaction patients were having erythema & swelling of skin lesion (69.2%), Occurrence of new skin lesions in 27%, edema of limbs were present in 38%, fever in 27%, neuritis in 34.6% while ulceration were present in 11.5% cases.

Clinical features	No of cases	Percentage
Erythema & swelling of skin lesion	18	69.2%
New skin lesions	07	26.9%
Edema of limbs	10	38.5%
Ulceration	03	11.5%
Neuritis	16	61.5%
Fever	07	26.9%

Table-2: Clinical features of type 2 reaction patients

In the present study all the 37(100%) patients presented with fresh crops of erythematous tender nodules. Other major clinical features were fever (86.4%), neuritis & edema (48.6%), myalgia & joint pain (67.5%).

Clinical features	No of cases	Percentage
Fresh crops of erythematous tender	37	100 %
Fever	32	86.4 %
Neuritis, edema	18	48.6 %
Lymphadenopathy	05	13.5 %
Myalgia & joint pain	25	67.5 %
Iritis	07	18.9 %
Ulceration	11	29.7 %

Table-3: Histopathological features of type 1 reaction

In histopathological findings of present study in type 1 reaction patients, most common finding was presence of lymphocytes in

granuloma (96%), Edema in papillary dermis (84.6%), lymphocytes at interface(65.4%), epithelioid cells (58%) while giant cells were found in 35%.

HPE findings	No of patients	Percentage
Lymphocytes in granuloma	25	96.1%
Edema in papillary dermis	22	84.6%
Lymphocytes at interface	17	65.4%
Epithelioid cells	15	57.75
Giant cells	09	34.6%

Table-4 : Histopathological features of type 2 reaction

In the histopathological findings of specimen from type 2 reaction patients infiltration of PMLN cells were found in all 37(100%) patients, edema in papillary dermis (86.5%), vasculitis (89%), leukocytoclasia (67.6%), presence of acid fast bacilli (62.2%) were among other findings.

HPE Findings	No of patients	percentage
PMNL cells	37	100%
Edema in papillary dermis	32	86.5%
Vasculitis	33	89.2%
Leukocytoclasia	25	67.6%
Acid fast bacilli	23	62.2%

DISCUSSION

This study was aimed to study clinical and histopathological features of Type 1 and Type 2 lepra reactions. The type of reactions in the present study are compared with Kumar et al, Scollard et al, Saritha et al, Rao et al and Vijay Adhe et al studies.⁷ Scollard et al(1994)²⁵ in their study observed type 1 reaction in (64.1%) and type 2 reaction (35.9%) of the patients which is in contrast with present study.⁸ In the study of Desikan et al (2007) out of 412 patients who presented with type I reaction 313 patients had BT, 9 patients had BB, 85 patients had BL and 5 patients had LL. Among 95 patients who had type II reaction 61 had LL and 34 had BL.⁹

In the study of Rao et al(2016) among the 52 patients who had type I reaction, 40 cases (76.92%), patients were Borderline tuberculoid, 10 cases (19.3%) were mid borderline and 2 (3.8%) were borderline lepromatous. Thus borderline tuberculoid patients had higher incidence of type I reaction. Out of 32 patients who had type II reactions, 9 cases (28.1%) were of borderline lepromatous leprosy and 23 cases (79.1%) were of lepromatous leprosy.¹⁰ In the study of Sharma et al²⁶ (2013) 10 cases (9%) showed lymphocytes in granuloma, 45 cases (40%) showed edema within papillary dermis, 4 cases (3.6%) showed lymphocytes at interface and 52 cases (46.2%) showed giant cells.¹¹ Fine et al(1993) showed in their report that there could be inter-observer variations in histopathological diagnosis of clinically suspected leprosy due to subjective interpretation and similar variations could also exist in diagnosing a lepra reaction.¹²

CONCLUSION

This study emphasizes the need for detailed history, clinical examination and investigations including biopsy for timely recognition of reactions, in order to halt the progress and prevent the permanent damage it causes. In the present study prevalence of type 2 lepra reaction was higher than type 1 lepra reaction. In the present study age of youngest patient was 9 years while of oldest one was of 76 years. Mean age of study sample was 41.8 years. Maximum patients belong to age group 41-60 years closely followed by age group 21-40 years. Majority of patients belong to lower socio-economic status. Most of them came are labourers and farmers from rural background. Anti-leprosy drugs were the commonest precipitating factor followed by physical or physiological stress and any concomitant infections which should be explained to the patient.

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