CLINICOPATHOLOGICAL CORRELATION OF DIFFERENT SPECTRUM OF HANSEN'S DISEASE

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ABSTRACT

BACKGROUND

Hansen's disease contributes to be a significant public health problem. Histopathological evaluation of skin biopsies plays a crucial role in the correct diagnosis of clinically ambiguous cases.

The present study was done to correlate clinically diagnosed new leprosy cases with that of histopathological findings.

MATERIALS AND METHODS

It was a descriptive study where skin biopsies of 50 newly diagnosed cases were done at our Dermatology Department during the period of one and a half years. The specimen was fixed in 10% formalin and sent to Pathology Department for routine histopathological examination.

RESULTS

From this study, it was observed that the commonest age group observed for leprosy was 21 to 30 years. Males are affected twice more commonly than females. The most common clinically diagnosed type was BT Hansen's. It was observed that there was complete agreement between clinical diagnosis and histopathological findings in 68.00% with maximum concordance in polar lepromatous zone (84.62%).

CONCLUSION

For accurate diagnosis, correlation of clinical and histopathological findings appears to be more useful than any of the parameters alone. In case of any discrepancy, the more advanced finding should be given greater weightage and the case is to be classified and treated accordingly.

KEY WORDS

Hansen's Disease, 1 and ½-Years, Clinical and Histopathological Correlation.

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BACKGROUND

Leprosy is a chronic granulomatous infectious disease that primarily affects the skin and peripheral nerves, even though it can be considered as a systemic disease. The incubation period is from 2.9 years to 5.3 years.[1] The term leprosy is a tribute to Norwegian physician Gerhard Armauer Hansen who identified the bacillus Mycobacterium Leprae as the course of the disease in 1873.[2] Ridley-Jopling classified leprosy according to clinical, bacteriological, immunological and histological criteria into TT (Tuberculoid Tuberculoid), BT (Borderline Tuberculoid), BB (Borderline Borderline), BL (Borderline Lepromatous) and LL (Lepromatous Lepromatous).[3] Exact typing of Leprosy clinically sometimes can be very difficult, for which histopathological examination should be done in all cases. No multibacillary cases should be treated as paucibacillary.

MATERIALS AND METHODS

It was a descriptive study, where 50 skin biopsies were obtained from patients clinically diagnosed as leprosy during the period of one and a half years in the Dermatology Department in Silchar Medical College and Hospital and sent to Department of Pathology and follow-up was done. A comparative study was done in this case.

Data was analysed by-

1. Comparing the clinical diagnosis with histopathological diagnosis.
2. Evaluating the concordance of histopathological and clinical diagnosis in each of the cases.

Concordance in case of indeterminate and histoid leprosy were also included.

RESULTS

Out of 50 clinically and histopathologically diagnosed cases, it was seen in age group starting from 1st decade to 7th decade. Most common cases occurred in the age group of 21 to 30 years. 28% (14 cases) and least common cases occurred in 10 to 20 years of age 6% (3 cases).

Age	Number of Cases	Percentage
10 – 20	3	6
21 – 30	14	28
31 – 40	4	8
41 – 50	9	18
51 – 60	12	24
61 – 70	8	16

Table 1. Age distribution of Cases

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Sex-Wise Distribution

Out of 50 clinically detected cases, 64% cases (32 cases) were males and 36% cases (18 cases) were females.

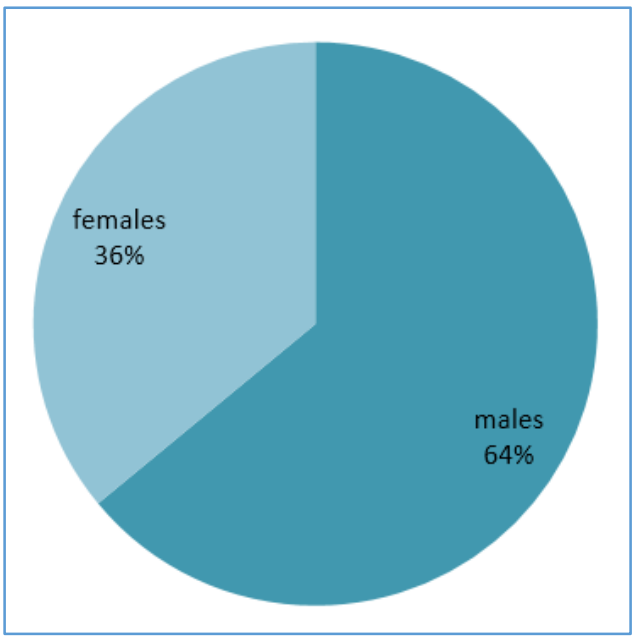


Table 2. Sex distribution of Cases

Out of 50 clinically diagnosed cases, 14% cases (7 cases) were diagnosed as TT. 32% cases (16 cases) were diagnosed as BT. 6% cases (3 cases) were diagnosed as BB. 10% cases (5 cases) were diagnosed as BL. 26% cases (13 cases) were diagnosed as LL. 8% cases (4 cases) were diagnosed as HH. 4% cases (2 case) were diagnosed as IL.

Type	No. of Cases	Percentage
TT	7	14%
BT	16	32%
BB	3	6%
BL	5	10%
LL	13	26%
HH	4	8%
IL	2	4%

Table 3. Showing Clinically Diagnosed Cases

Modified Ziehl-Neelsen Staining

All cases of BLHD, LLHD and histoid Hansen's showed 100% positivity. 2 cases (75%) of BBHD showed positivity, whereas all cases of TTHD, BTHD and IL did not show any positivity to modified Ziehl-Neelsen stain.

HPE Diagnosis	No. of Positive Cases	Percentage
TT (N= 8)	0	0%
BT (N= 16)	0	0%
BB (N= 3)	2	75%
BL (N= 6)	6	100%
LL (N= 13)	13	100%
Histoid Hansen's (N= 3)	3	100%
IL (N= 1)	0	0%

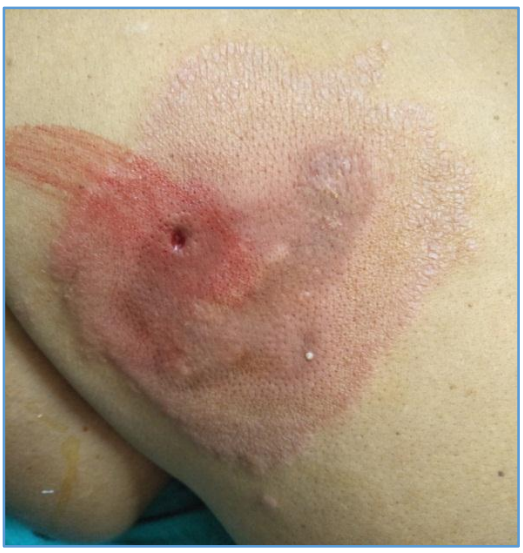
Table 3. Modified Ziehl-Neelsen Positivity

Concordance with Clinical Diagnosis

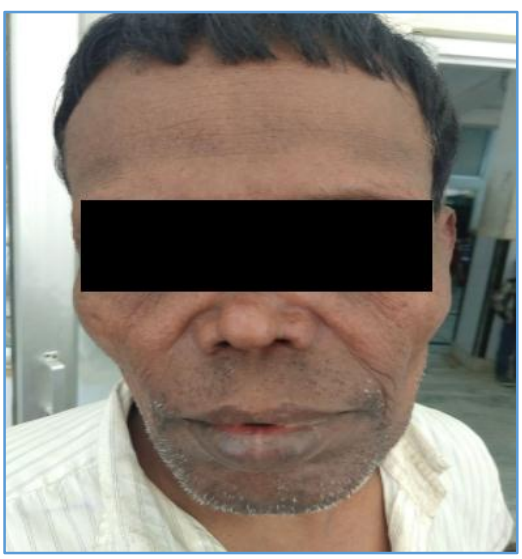
Maximum clinicohistopathological concordance was seen with LLHD (84.62%) followed by Histoid Hansen's (75%), BB (66.67%), BTHD (62.50%), BL (60.00%), TTHD (57.15%) and IL (50.00%). Overall concordance of diagnosis of spectrum of Hansen's disease was seen in 68% of cases (34 cases). Disagreement was seen in 32% cases (16 cases).

Clinical Diagnosis		Histopathological Diagnosis							
Type	Number	TT	BT	BB	BL	LL	IL	HL	Aggregate
TT	7	4 (57.15%)	3 (42.85%)						57.15%
BT	16	4 (25.00%)	10 (62.50%)	1 (6.25%)	1 (6.25%)				62.50%
BB	3		1 (33.33%)	2 (66.67%)					66.67%
BL	5		1 (20.00%)		3 (60.00%)	1 (20.00%)			60.00%
LL	13				2 (15.38%)	11 (84.62%)			84.62%
IL	2		1 (50.00)				1 (50.00%)		50.00%
HL	4					1 (25.00%)		3 (75.00%)	75.00%
Total	**50**	**8**	**16**	**3**	**6**	**13**	**1**	**3**	

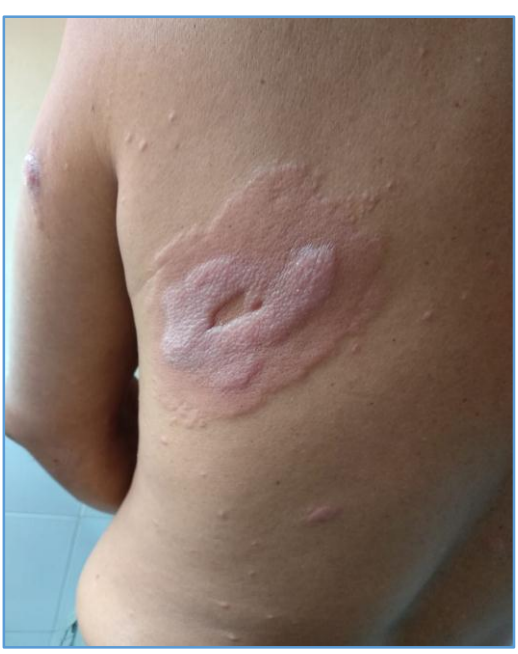
Table 4. Showing Clinicohistopathological Correlation



BT Hansen (Punch Biopsy Done)

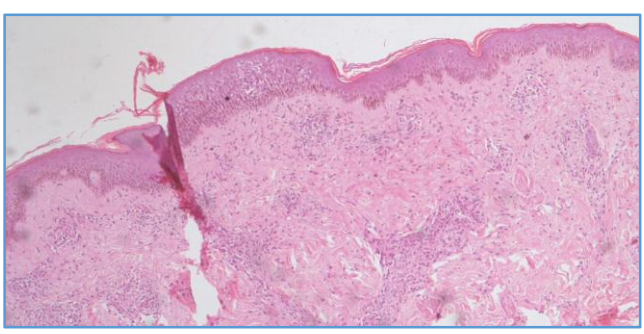


HD LL Facies

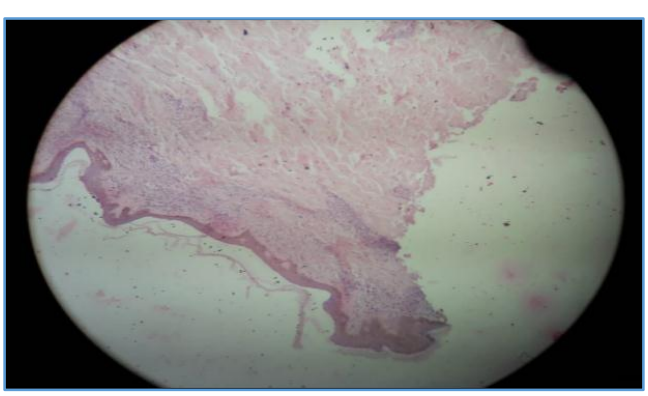


BB Hansen

BT Hansen



Histopath of LL HD



Histopath of BL HD

DISCUSSION

In our present study, maximum incidence was seen in age group 21 - 30 years (28%) and the lowest incidence was seen in age group 10 - 20 years (6%). 64% were males and 36% were females with a ratio of 1.7: 1. Similar findings were found with Suri SK et al,[4] Sehgal et al,[5] Nadkarni et al[6] and

Bijjaragi et al.[7] With modified Ziehl-Neelsen stain for acid fast bacilli 100% positivity was noted in LLHD, BLHD and Histoid Hansen's. The finding in LLHD and BLHD are comparable with the study of Aryon de Almeda et al, which shows 100% for BLHD and LLHD.[8] In the present study, complete concordance of clinical and histopathological diagnosis was seen in 68% of cases with maximum concordance in the diagnosis of LLHD (84.62). This finding is comparable with the study of Niranjana Moorthy et al, where overall concordance was seen in 62.63% of cases with maximum concordance in the diagnosis of polar lepromatous Hansen's disease (80%).[9]

CONCLUSION

Classification of early types of leprosy clinically accurately may be difficult sometimes. So pathological examination should be done in all cases and clinical and histopathological correlation is important. However, certain degree of overlap is seen both clinically and histologically. So clinicohistopathological correlation along with bacterial index appears to be more useful for accurate typing of leprosy.

REFERENCES

[1] LockWood DN, Sarno E, Smith WC. Classifying leprosy patients - searching for the perfect solution? Lepr Rev 2007;78(4):317-20.

[2] Eidt LM. Breve historia da hanseniase: sua expansao do mundo para as Americas, o Brasil e o Rio Grande do Sul e sua trajetoria na saude publica brazileira. Saude Soc 2004;13(2):76-88.

[3] Ridley DS, Jopling WH. Classification of leprosy according to immunity. A five group system. Int J Lepr Other Mycobact Dis 1966;34(3):255-73.

[4] Suri SK, Iyer RR, Patel DU, et al. Histopathology and clinic-pathological correlation in Hansen's disease. J Res Med Den Sci 2014;2(1):37-44.

[5] Sehgal VN, Ghorpade A, Saha K. Urban leprosy an appraisal from Northern India. Lepr Rev 1984;55(2):159-66.

[6] Nadkarni NS, Rege VL. Significance of histopathological classification in leprosy. Indians J Lepr 1999;71(3):325-32.

[7] Bijjaragi S, Kulkarni V, Suresh KK, et al. Correlation of clinical and histopathological classification of leprosy in post elimination era. Indian J Lepr 2012;84(4):271-5.

[8] De Almeida BJA, Jambeiro J, Cirqueira JSO, et al. Retrospective histopathological classification of 1, 108 skin biopsies from patients clinically suspected of having leprosy from Bahia, Northeast Brazil. Revista da sociedade Brazileria de medicina Tropical 1998;31(6):533.

[9] Moorthy BN, Kumar P, Chatura KR, et al. Histopathological correlation of skin biopsies in leprosy. Ind J Dermatol Venereol and Leprol 2001;67(6):299-301.