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Original Research Article

Clinico-epidemiological pattern of determinants of visible disabilities among patients affected with leprosy in Raipur district, Chhattisgarh

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ABSTRACT

Background: Widespread implementation of MDT has been an extremely successful strategy for leprosy control across the world including India instead of it Chhattisgarh and Dadra & Nagar Haveli are yet to achieve elimination. Identifying the causes of delay in presentation remains a matter of concern, Hence the present study was conducted with intent to assess the clinico-epidemiological patterns of determinants of Leprosy patients with visible disabilities (Grade II disability) in Raipur District of Chhattisgarh.
Methods: This community based cross sectional study was conducted in Raipur district during August 2017- October 2019. 87 Newly diagnosed leprosy patients with visible Grade II disabilities registered during 1st April 2016- 31st March 2017 were included in the study. Patient's information was obtained from their treatment card and was tracked in the community; necessary information was obtained in a predesigned pretested proforma and clinical examination was carried out.
Results: Out of 87 study participants**,** almost are all the subjects had multi-bacillary type of leprosy. The mean duration between appearance of 1st symptoms & diagnosis was 14.59±11.87 months.
Conclusions: The current study has observed many gaps in patient care viz. Lack of supervision of treatment, follow up examination and assessment of disability during course of care. Ignorance of early signs and symptoms was found to be the commonest cause of delayed diagnosis.

Keywords: Visible disability, Leprosy, Health seeking behaviour

INTRODUCTION

Disability or physical impairment in leprosy is usually due to nerve damage resulting from the chronic granulomatous inflammation caused by mycobacterium leprae.[1] 15% of the world's population has some form of disability.[2] Leprosy is also one of the cause of disability which is preventable if it is identified earlier.[3] Widespread implementation of MDT has been extremely successful strategies for leprosy control across the world including India. Out of 36 states or UTs, one state (Chhattisgarh) and one U.T. (Dadra and Nagar Haveli) are yet to achieve elimination.[4] Identifying the causes of delay in presentation remains a matter of concern. Hence the present study was conducted with an objective to assess the clinico-epidemiological pattern of determinants of leprosy patients with visible disabilities (Grade II disability) in Raipur district of Chhattisgarh.

METHODS

Study design: A community based cross-sectional study.

Inclusion criteria

All newly diagnosed leprosy patients with visible disabilities (grade II disability) registered between 1st April 2016 to 31st March 2017 (financial year) of Raipur district were included.

Exclusion criteria

Patients who had migrated from their actual address, patients who did not consent to participate in the study and patients who were critically ill were excluded.

Study duration

The study was conducted between August 2017- October 2019.

Sample size

All **(**87) newly diagnosed leprosy cases with grade II disability registered during the financial year 1st April 2016 till 31st March 2017,

Study area

All the 4 blocks of Raipur district of, Chhattisgarh (Arang, Tilda, Abhanpur, Dharsiwa)

Study tool and data collection

A pre designed, pre tested, semi structured questionnaires consisting clincio-epidemiological profile, clinical history and clinical examination. After obtaining ethical clearance from the institute's ethical committee; list of enrolled patients was obtained from District leprosy office, Raipur. These patients tracked in the community by treatment card address and their telephone numbers. After obtaining informed consent from patients, necessary clinical history was elicited followed by clinical examination.

Delay in diagnosis

It is the time from the patient's first visit to a health care facility till diagnosis. A period of 180 days was chosen as maximum acceptable delay', and defined as a cut-off point for longer patient delay.

Treatment outcomes

Completed: When MDT treatment for PB patient in 6 month or in 9 month and for MB patients in 12 month or 18 months.

Defaulter: Whenever missed dose for PB patient more than three months and for MB patient more than 6 months declared as defaulter.

Relapse: Re-occurrence of the disease at any time after the completion of a full course of treatment.

Ethical approval

Ethical Committee Pt. J.N.M. Medical College, Raipur, Chhattisgarh.

Study analysis

Data collected was entered and compiled in Microsoft excel 2007. After checking its completeness and correctness data were analyzed using SPSS software version 17.0.

RESULTS

Out of all 87 study participants included in this study, 64.6% were male, 37.9% were >44 years (mean 39.79±14.25 years), 89.7% were married, majority (71.3%) were literate. 50.6% were from rural residents with majority (73.6%) from other backward castes. Many (43.7%) belonged from middle class socioeconomic status as per the modified B. G Prasad classification (Table 1).

Table 1: Distribution of students according to their socio-demographic characteristics.

Socio-demographic variables		Study subjects	
		Frequency	%
Age group (in years)	<15	2	2.3
	15-29	20	23
	30-44	32	36.8
	>44	33	37.9
Mean year of age = 39.79±14.25			
Sex	Male	56	64.4
	Female	31	35.6
Category	Unreserved	8	9.2
	Other backward caste	64	73.6
	Schedule caste	11	12.6
	Schedule tribes	4	4.6

Continued.

Socio-demographic variables		Study subjects	
		Frequency	%
Marital status	Married	78	89.7
	Unmarried	7	8
	Separated	2	2.3
Educational status	Illiterate	25	28.7
	Up to primary	19	21.8
	Up to middle	22	25.3
	Up to higher	19	21.8
	Up to graduate and above	2	2.3
Place of resident	Rural	44	50.6
	Urban	43	49.4
Socio-economic status	Upper class (≥6254)	3	3.4
	Upper middle class (3127-6253)	15	17.2
	Middle class (1876-3126)	38	43.7
	Lower middle class (938-1875)	26	29.9
	Lower class (<938)	5	5.7
	Total	87	100

Table 2: Distribution of clinical presentation of study subjects during treatment and following treatment (n=87).

Variables		Study subjects	
		No.	%
Types of leprosy	Pauci-bacillary	8	9.2
	Multi-bacillary	79	90.8
H/o lepra reaction	Present	28	32.2
	Absent	59	67.8
Occurrence of lepra reaction (n=28)	Before	14	50
	During treatment	7	25
	After	7	25
Type of lepra reaction (n=28)	Type I	7	25
	Type II	21	75
MDT taken under supervision	Yes	33	37.9
	No	54	62.1
Examined by doctor on subsequent visits	Yes	33	37.9
	No	54	62.1
Treatment outcomes	Completed	76	87.4
	Defaulter	11	12.6
Total		87	100

Table 3: Distribution of health seeking behaviour of study subjects (n=87).

Variables		Study subjects	
		No.	%
1st health facility visited by study subjects	Government health facility	34	39.1
	Faith healers	5	5.7
	Private practitioners	41	47.1
	Quack	7	8
Health facilities where diagnosis was made	AIIMS	1	1.1
	Community health centre	23	26.4
	District hospital	28	32.2
	Primary health centre	10	11.5
	Private hospital	2	2.3
	RLTRI	23	26.4
Appearance of 1st symptoms & diagnosis	≤6 months	27	31
	>6 months	60	69
Mean= 14.59±11.87			

Continued.

Variables		Study subjects	
		No.	%
Follow-up after completion of MDT	Yes	33	37.9
	No	54	62.1
Pattern of deformities at the time of diagnosis	Two fingers claw	48	55.2
	For fingers claw	21	24.1
	Ulcer in hands	2	2.3
	Resorption of finger's	1	1.1
	Lagopthamia	3	3.4
	Claw toes	2	2.3
	Ulcer in foots	14	16.1
	Wounds in foot	7	8
	Foot drop	7	8
Total		87	100

Almost all (90.8%) were multi-bacillary leprosy. 32.3% experienced lepra reaction, of them 50% prior to the starting treatment followed and 25% each during and after the completion of treatment respectively.62.1% were neither received supervised 1st dose nor were examined by a health professional or doctor. But 87.4% subjects were able to complete their treatment on time (Table 2).

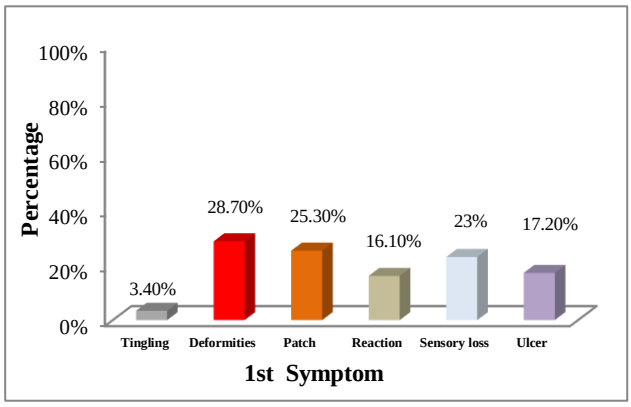

Figure 1: Distribution of 1st symptoms noticed by study subjects (n=87).

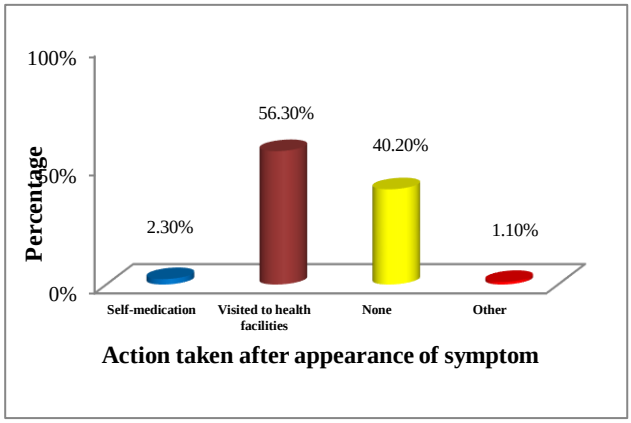

Figure 2: Distribution of study subjects on the basis of action taken by them after appearance of symptoms (n=87).

Most common symptom noticed were deformities (28.7%) followed by patches (25.3%), sensory loss (23%), ulcerations (17.2%), lepra reactions (16.1%) and tingling (3.4%) (Figure 1).

More than half (56.3%) were seeking health care by visiting various health facility, (40.2%) didn't do anything and (2.3%) subjects self-medicated after noticing the 1st sign and symptoms (Figure 2).

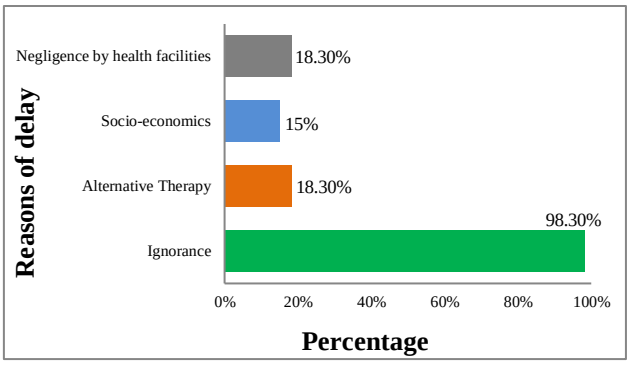

Figure 3: Distribution of study subjects according to reasons for delay in diagnosis (n=60) (multiple response included).

43.7% visited government health facilities 47.1% to private dispensaries, 8% visited quacks and 1.1% visited faith healers. Almost all the subjects were diagnosed in public health facilities. Almost 2/3rd (69%) of study subjects were diagnosed more than 6 months after the appearance of 1st symptom with a mean duration of 14.59±11.87 months. 2/3rd study subjects were neither followed up by health facilities (staff or professionals) nor the study subject him/herself showed up for follow up after the completion of treatment. Majority of study subjects had two finger claws (55.25%), followed by 24.1% four finger claws, 16.1% ulcer in foots, 8% wounds in foot, 8%% foot drops, 3.4% lagopthlamia, 2.3% ulcer in hand, 2.3% claw toes, 2.3% resorption of toes and 1.1% resorption of finger (Table 3).

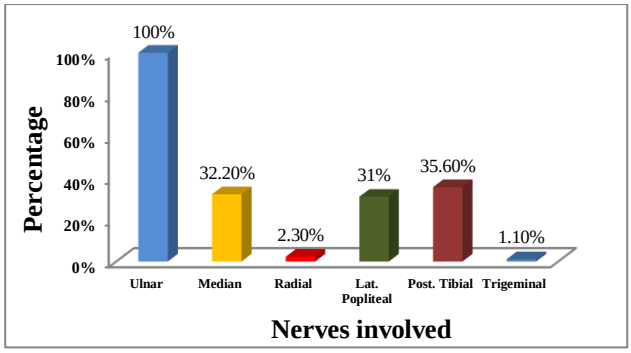

Figure 4: Distribution of study subjects according to nerve involvement (multiple response included).

Most commonly involved in study subjects was ulnar nerve followed by posterior tibial nerve35.6%, lateral popliteal nerve31%, radial 2.3% and trigeminal nerve 1.1% (Figure 4).

The commonest cause for delayed in seeking health care or delayed in diagnosis was ignorance (94.3%), while (17.2%) were delayed because of negligence of health professional's or (17.2%) by taking alternative therapies by study subjects followed by (9.2%) due to their socio-economic conditions (Figure 3).

DISCUSSION

In the present study64.4% were male, similar finding was also reported by Raghavendra et al reported, 78% were males.[5] In present study 90.8% had the multi-bacillary leprosy which was little less 63-69% proportion in similar study reported by Ghoshal et al and Arora et al.[6,7] 28.7% study subjects noticed deformities as 1st symptom noticed followed by patch, sensory loss, ulcer, lepra reactions and tingling respectively contradicts to this, Zhang et al has noticed tingling; sensation or numbness preceding the patch an early symptom of leprosy.[8] 47.1% study subjects after the appearance of the first symptom visited private health facilities (private sector). Similar observation were made by Balegar et al that first contact for seeking care through local practitioner, PHC/CHC, quacks, faith healers.[9] Present study revealed that ignorance by patient was the commonest reason for delayed in seeking care and for diagnosis, similar observation was reported by Doshi et al reason for the delay in care was due to unawareness and ignorance and social stigma in similar kind of study.[10]

In the current study ulnar nerve was the commonest affected nerve and similar observations noticed by various authors by Bombay leprosy project clinics Mumbai, Maharashtra where majority (65.22%) of study participants had showed ulnar nerve involvement e.g. two-finger claws, Jain et al observed 60% claw hand and Naik et al reported anesthesia in the palm, Chavan et al reported ulcer showed at ulnar nerve involvement as primary nerve.[11-14]

CONCLUSION

Although we are in the era of eradication of Leprosy but the current study has observed many gaps in patient care viz. Lack of supervision of treatment, follow up examination, and assessment of disability during course of care.

Active surveillance of hidden causes in the Community, capacity building, and hands-on training of front-line public health care providers is recommended so that early diagnosis and treatment will be ensured and hence disability can be minimized. Despite of availability of free of cost diagnosis and treatment for leprosy instead of that significant number of cases visiting private health facility was observed. The author specially recommends strong advocacy for patient's follow up and monitoring by provision of impairment cards along with the treatment card at the beginning to ensure rehabilitative services.

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Ethical approval: The study was approved by the Institutional Ethics Committee, Pt. J.N.M. Medical College, Raipur, Chhattisgarh

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