IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 3 Ser. 1 (March. 2019), PP 22-24
www.iosrjournals.org

Clinical Profile and Short Term Outcome of Optic Neuritis in Manipur

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Abstract:*In this prospective study, 22 eyes of 20 optic neuritis patients were examined and followed up for 3 months. Mean age was 47.6 ± 14.05 years. Female preponderance was seen (65% of cases). Papillitis (90% of eyes) was more common than retrobulbar neuritis (10% of eyes). Bilateral presentation was seen in 10% cases. At presentation, most of the eyes presented with visual acuity <6/60 (n=15, 68.18%) which improved to ≥6/60 in most of the patients (n=18, 81.8%) at three months followup.The clinical profile of optic neuritis in Manipur population is different from that in the Western population but similar to Asian population. Unlike reported in the Western literature, papillitis and unilateral presentation was more frequent but poorer outcomes.*

Keywords: *clinical profile,optic neuritis, India, Manipur.*

Date of Submission: 20-02-2019 Date of acceptance: 06-03-2019

I. Introduction

Optic neuritis(ON) is an acute inflammatorydisorder of the optic nerve. The disease ischaracterized by unilateral sudden loss of vision in the affected eye, often accompanied by periocular pain. Majority of cases are idiopathicin nature however demyelination specificallymultiple sclerosis is reported to bemost common association in western literature. [1,2]

The data from the eastern part of the world, theAsian countries suggest that the profile of theoptic neuritis patients in this region is differentfrom that of the western population.[2-7]The dissimilarity is not only in type of presentationbut also that the association and risk ofprogression to multiple sclerosis is low in theAsian population[4,6,7] as compared to that reportedby Optic Neuritis Treatment Trial (ONTT).[8,9]

However, demyelination, specifically multiple sclerosis (MS), is reported to be the most common etiology in theWestern literature. [1]In India and other Asian countriesthe incidence of MS is reported to be low. [2,7]Moreover, various studies from South East Asia have documented difference in etiology, clinical presentation, and prognosis ofON when compared with the Western population. [5,6,7]

The cause and treatment of optic neuritis are unclear, butprognosis for visual recovery is generally good even thoughreturn of visual function is almost never complete. Afterresolution of optic neuritis, almost all patients show somesigns of optic nerve damage and even when a patient's acuityrecovers to 20/20, abnormalities frequently remain in othermeasures such as contrast sensitivity, color vision, and visualfield.Visual loss may be subtle or profound and mayoccur over hours (rarely) to days (most commonly). Thenadir is usually about 1 week after the onset. [10]

II. Methods and Materials

In this prospective study patients who presentedat our centre, Ophthalmology Department, Regional Institute of Medical Sciences, Imphal, Manipur,Indiafrom November 2016 to May 2018 with sudden visual loss, in whomoptic neuritis was diagnosed on clinical examinationwere included.Patients of Optic Neuritis were included in the study after obtaining informed consent.

Optic Neuritis was diagnosed on the basis of history and clinicalexamination, which included sudden unilateral or bilateralvisual loss of less than 2 weeks duration, presenceof relative afferent pupillary defect, andnormal or swollen optic disc on fundus examination.

Inclusion Criteria:
(1) The first episode of ON
(2) Follow- up of atleast three months
(3) No prior steroid treatment.

Exclusion Criteria:
(1) Other types of optic neuropathy such ascompressive, hereditary, vascular, toxic, traumatic, metabolic, or infiltrative optic neuropathy;
(2) Other ocular diseases suchas amblyopia, high myopia, uveitis, or glaucoma;
(3) A previous episodeof Optic Neuritis.

Detailed history was taken regarding onset ofvisual loss, duration, whether associated withpain, history of any previous attack and historyof any other neurological symptoms. Clinicalexamination included determination of visualacuity on Snellen's chart, pupil reaction, slit lampbiomicroscopy and fundus examination.

Magnetic resonance imaging (MRI) of the brain and orbit with contrast, although advised in all patients, could only be performed in 6 cases due to financial constraints. Hemogram, total and differential white blood count; erythrocyte sedimentation rate, chest X-ray, Mantoux test, and serology for syphilis were obtained in all cases.

All patients received Inj. Methylprednisolone 1gm/day in 500ml normal saline given intravenously over 24 hours for three days followed by Oral Prednisolone 1mg/kg/day which was tapered gradually. Patients were followed up after 1 week, 1 month and 3 months.

III. Results

22 eyes of 20 patient were included in this study of which 13 were female (65%) and 7 were male (35%).

The mean age of the patient was 47.6 ± 14.05 years ranging from 7-67 years of which 12 (60%) were in 40-50years age group. Unilateral presentation was seen in 90% (18 patients), bilateral presentation was seen in 10% (2 patients).

20 eyes (90%) had papillitis whereas retrobulbar neuritis was seen in 2 eyes (10%).

Table 1. Demographic characteristics of patients

Characteristics	**% of patients**
Age (years) (range 7-67)	
0-20	5
20- 40	15
40-60	60
60-80	20
Sex	
Male	35
Female	65
Laterality	
Unilateral	90
Bilateral	10

Table 2. Characteristics of optic neuritis

Characteristics of optic neuritis	**No. of eyes**
Retrobulbar neuritis	2 (10%)
Papillitis	20 (90%)

Table 3. Visual outcome of the patients (No. of eyes)

Visual acuity	**On presentation**	**At day 7**	**At 1 month**	**At 3 months**
≥6/6	0	0	0	0
<6/6 - ≥6/12	1	2	3	5
<6/12 - ≥6/60	6	10	12	13
<6/60	15	10	7	4
TOTAL	22	22	22	22

At presentation, most of the eyes presented with visual acuity <6/60 (n=15, 68.18%) and only one eye had visual acuity better or equal to 6/12 (n=1, 4.54%).

At three months follow-up, most eyes had visual acuity better or equal to 6/60 (n=18, 81.8%) of which most of them had atleast 2-line improvement in visual acuity on Snellen's chart, whereas in 4 eyes (n=4, 18.19%), visual acuity remained the same and there was no further deterioration in visual acuity in none of the eyes.

MRI was done only in 6 patients and all showed a normal study with no significant findings.

IV. Conclusion

Optic Neuritis Treatment Trial initially undertaken to evaluate the role of corticosteroidsin management was a pioneering study thatshaped up our understanding of optic neuritis. Even as the western data suggest that atleast50%of patientswith optic neuritiswill eventually develop MS[8,9] the studies from the Asia[2-7] provide the contrary report.

The age of patient in our study ranged from 7-67 years similar to other studies reported from Asian countries[4,6,7] preponderance, asreported in ONTT and other studieswas seen in ourstudy also. Papillitis was noticed in 20(90%) eyes which is high compared to ONTT[1] and Saxenaet al. [2]

Bilateral involvement was seen in 10%. Most of the eyes (81.8%) had improvement in visual acuity atleast by 2 lines on Snellen's chart by the end of three months follow up which agrees to the widely documented evidence that visual acuity improves after attack of optic neuritis.

We acknowledge that there is a possibility of underestimation of MS in our study given the fact that MRI was not performed in all cases; however, other reports from Asian countries also show low incidence of MS in the population from this part of the world.[4,5,6] The limitations of our study include not obtaining contrast sensitivity, visual field and MRI in all cases and no long term follow up for assessing the late response of drug and visual outcome of the patients after 3 months.

A more comprehensive and larger study may reflect a more substantive data in the population.

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