Neurological manifestations in HIV seropositive patients: A study of 40 patients

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Abstract Background: The true prevalence of HIV related neuroinfections and pathology is not available due to inadequate medical facilities, social stigma and ignorance that lead to under diagnosis. Published reports of Neurological manifestations of HIV infection especially from this part of country are limited where some opportunistic infections are more common. **Objective:** To study the pattern of neurological manifestations in PLHA. **Methodology:** This is a cross sectional study conducted in medicine department of J.J. Group of Hospitals, Mumbai involving 40 diagnosed cases of HIV/ AIDS and with suspected neurological infection. **Results:** Out of 37 males, majority i.e. 20(54.1%) were from 21 to 30 years age group followed by 8 i.e. 21.6% from 31 to 40 years age group. All 3 i.e. 100% women were from 21 to 30 years age group. 17 (42.5%), altered sensorium was the common most symptom. Tubercular lesion constituted the majority of neurological complications (28.6%) followed by the various neuropathies (11.8%) and cerebral toxoplasmosis (11.8%) in this study. Prevalence of tubercular meningitis was 32.5%. **Conclusion:** Commonly observed neurological opportunistic infections weretubercular meningitis was 32.5%, followed by toxoplasmosis 10% and 5% prevalence was found in case of spinal cord lesion and neuropathies. **Key Word:**HIV, neurological manifestations

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INTRODUCTION

It is estimated that India had approximately 0.12 million new HIV infections in 2009.¹The nervous system is among the most frequent and serious target of HIV infection, occurring in patients with profound immunosuppression even some time neurological disease is the first manifestation of symptomatic HIV infection in 10–20% of patients.²⁻⁴The true prevalence of HIV related neuroinfections and pathology is not available due to inadequate medical facilities, social stigma and ignorance that lead to underdiagnosis.⁵Published reports of Neurological manifestations of HIV infection specially from this part of country are limited where some opportunistic infections are more common. So in this study we planned to study the various neurological disorders in HIV positive patients.Human Immunodeficiency Virus (HIV) infection is a global pandemic, India has second largest burden of HIV illness. Nervous system is most frequent and serious target of HIV infection, not only secondary to immune dysfunction but also to more primary effects of retrovirus. Neurological problem is the first manifestation of symptomatic HIV infection in 10 - 20% of patients (HIV sentinel surveillance, 2007). Neurological manifestation may be either primary to pathological process of HIV infection or secondary to opportunistic infections or neoplasm. It may be inflammatory, demyelinating or degenerative in nature. The neurological manifestations, natural course and outcome of HIV disease is likely to be different in India from other countries because of prevailing endemic infections, poverty, illiteracy, inability to take anti-retroviral therapy (ART) and malnutrition.

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MATERIAL AND METHODS

This is a cross sectional study conducted in medicine department of J.J. Group of Hospitals, Mumbai

METHODOLOGY

Study setting: Department of Medicine OPD and IPD of J.J. Group of Hospitals,Mumbai.

Study duration: January to October 2010

Study design: Descriptive Observational study

Sample size: All the patients during the above mentioned period i.e 40

Study subjects: All 40 diagnosed cases of HIV/ AIDS and with suspected neurological infection

Inclusion criteria

- cases of HIV/ AIDS and with suspected neurological infection
- Those who are willing to participate with informed consent

Exclusion criteria

• Those who are not willing to participate in study **Statistical analysis plan:** Data enetered in MS excel sheet and analysed by using SPSS 15.0 version IBM USA. Qualiatative data was expressed in terms of percentages and quantitative data was expressed in terms of mean and standard deviation.

RESULTS

 Table 1: Distribution according to age and sex

		Male		Female	
		Number	%	Number	%
Age group in years	11 to 20	0	0.0	0	0.0
	21 to 30	20	54.1	3	100.0
	31 to 40	8	21.6	0	0.0
	41 to 50	7	18.9	0	0.0
	51 to 60	2	5.4	0	0.0
	Total	37	100.0	3	100.0

In our study, there are 37 males and 3 females. Out of 37 males, majority i.e. 20(54.1%) were from 21 to 30 years age group followed by 8 i.e. 21.6% from 31 to 40 years age group. All 3 i.e. 100% women were from 21 to 30 years age group.

Table 2: Distribution according to neurological symptoms

		Number	%
Neurological symptoms	Altered sensorium	17	42.5
	Vertigo	11	27.5
	FND	12	30
	Headache	4	10
	Cranial nerve abnormality	3	7.5

In majority of subjects, i.e. 17 (42.5%), altered sensorium was the common most symptom. This is followed by FND in 12 (30%) patients. Vertigo was seen in 27.5% and headache in 10% patients.

Table 3: Distribution according to parts of neuraxis involved

	Number	%		
Meningo encephalitis (n-23)				
Tubercular	12	28.6		
Cryptococcal	2	4.8		
Viral	1	2.4		
Aseptic	6	14.3		
Intracranial SOL	10	23.8		
Tuberculoma	2	4.8		
TB abscess	1	2.4		
Toxoplasmosis	5	11.8		
Tumors	2	4.8		
Vascular lesion	3	7.1		
Spinal cord	5	11.8		
Peripheral neuropathy	5	11.8		
Dementia Complex	4	10.0		

Tubercular lesion constituted the majority of neurological complications (28.6%) followed by the various neuropathies (11.8%) and cerebral toxoplasmosis (11.8%) in this study.

Table 4: CSF abnormalities in various neurological manifestations

Neurological	Totalcases	Abnormal Cases	%
Tubercular	16	13	81.3
Toxoplasmosis	7	4	57.1
Viral meningitis	2	2	100.0
Spinal cord lesion	5	2	40.0
Neuropathies	10	2	52.1

CSF analysis is important in diagnosing and confirming the diagnosis of neurological opportunistic infection in our study. Out of 40 patients, 16 are having tubercular aetiology of which 13 were confirmed on CSF i.e. 81.3%. So the prevalence was 32.5%. Prevalence of toxoplasmosis was found to be 10%. 5% each prevalence was found in case of viral meningitis, spinal cord lesion and neuropathies.

DISCUSSION

In our study, the incidence of neurological involvement was found to be maximum in age group of 21-40 years which correlates with other studies.^{6,7-12}Of the 40 patients 37 (92.5%) were males 3(7.5%) were females. Male to female ratio was 12:1. This ratio is higher than few other studies.^{7,13} In our study, majority of subjects, i.e. 17 (42.5%), altered sensorium was the common most symptom. This is followed by FND in 12 (30%) patients. Vertigo was seen in 27.5% and headache in 10% patients. Our findings are consistent with the study carried out by SK Sharma et al¹⁴ and Satyendran KS et al.¹⁵ In our study, CSF analysis showed the prevalence of tubercular meningitis was 32.5%, followed by toxoplasmosis 10% and 5% prevalence was found in case of spinal cord lesion and neuropathies. These findings are consistent with Jordan BD et al.¹⁴

CONCLUSION

In our study commonly observed neurological opportunistic infections weretubercular meningitis was 32.5%, followed by toxoplasmosis 10% and 5% prevalence was found in case of spinal cord lesion and neuropathies.

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