

Study of distribution of HIV patients with various otorhinolaryngological manifestations according to their CD4 count

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Abstract

Background: The acquired immunodeficiency syndrome has become a pandemic across the globe. Head and neck manifestations of disease are prevalent, and up to 100 % of HIV patients will have some head and neck presentation of the disease during the course of their illness. **Objectives:** 1. To study the various otorhinolaryngological manifestations in H.I.V. positive patients. 2. To study the occurrence of various otorhinolaryngological manifestations at different CD4 counts. **Methodology:** a cross sectional study conducted in 109 HIV patients. Data collected using pre tested questionnaire. **Results:** The mean age was 34.73 ± 12.52 yrs. Patients presented with symptoms related to oral cavity 40 (36.69%), Ear 27 (24.77%), Neck 24 (22.01), followed by Nose 22 (18.29%), Oropharynx 14 (12.84%) and facial nerve 2 (1.83%). Patients are significantly affected with oral candidiasis ($Z=4.71$, $p<0.001$) at CD4 count below 500/ μ l. **Conclusion:** Patients can present with various symptoms related to oral cavity (36.69%), nose (18.29%), neck (22.01%), oropharynx (12.84%) and ear (24.77%).

Keywords: CD4 count.

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INTRODUCTION

Acquired Immunodeficiency Syndrome is an illness which attacks and gradually destroys the body's defense mechanism and leaves the patient immunodeficient. Initially a disease of homosexuals and hemophiliacs, it is now a disease that affects individuals of every age, sex and socioeconomic group, becoming a worldwide epidemic and spreading into regions of globe such as Southeast Asia.¹ An estimated 0.8% of adults aged 15-49 years worldwide are living with HIV. Sub-Saharan Africa remains most severely affected. Although the regional

prevalence of HIV infection is nearly 25 times higher in sub-Saharan Africa than in Asia, almost 5 million people are living with HIV in South, South-East and East Asia combined.² Often, an otorhinolaryngologist is the primary physician to diagnose H.I.V. infection. They may present with diverse spectrum of the disease ranging from common complaints to unusual manifestations. Therefore, otorhinolaryngologist must be aware and vigilant for its various presentations. This has led us to undertake the present study.

MATERIAL AND METHODS

The study was undertaken in the ENT OPD of tertiary care center, Kolhapur from October 2011 to December 2012.

Inclusion Criteria

1. All HIV positive patients who have developed otorhinolaryngological manifestations after being diagnosed as HIV positive.
2. Patients who presented with otorhinolaryngological manifestation (symptoms < 3mths) and were diagnosed to be seropositive for first time.

Exclusion Criteria

1. Patients having otorhinolaryngological manifestations prior to the diagnosis of HIV
2. Patients who have refused to participate in the study.

When the new patients came to OPD, according to NACO guidelines first their HIV status was confirmed by Tri Dot method. Detailed information regarding sociodemographic profile and clinical profile was collected. Thereafter relevant investigations including CD4 count were advised and the suitable treatment regimen was decided. Data was collected after taking the prior permission of the ethical committee. Proforma was pre tested and validated during the pilot study. All information regarding patients was collected in the separate room ensuring confidentiality after taking informed consent. Total 109 HIV positive patients including 46 males and 63 females had given consent for examination and use of clinical data for the study purpose. Each patient was evaluated for health assessment. General examination and systemic examination was done according to standard guidelines. Each patient underwent complete ENT examination by head mirror and/or endoscopy of the nose, larynx and pharynx and microscopic examination of both ears according to standard guidelines. If necessary a profound examination with sonography, computed tomography, pure tone audiometry, and/or histological, microbiological examinations from biopsies were performed. On the basis of clinical suspicion, a probable diagnosis of ENT manifestation was kept and various lab investigations were done to confirm the diagnosis. CD4 counts were done on BD FACS Count in the ART center at the institute. Other supportive investigations were X ray chest, X ray paranasal sinuses, Computed tomography of head and neck, FNAC from lymph nodes, USG of swelling, swab for culture and sensitivity, biopsy, pure tone audiometry as per the demands of clinical presentation and confirmation of diagnosis.

Statistical analysis

Data was tabulated and analysis was done using SPSS (Statistical package for social sciences) version 16.0.

RESULTS

The male: female ratio was 0.73:1. Most of the patients belonged to 31-40 years of age (43.12%), followed by 41-50 years of age (18.35%). Youngest patient was 5 years old and oldest was 61 years old. (Figure No.1) The mean age was 34.73 ± 12.52 yrs.

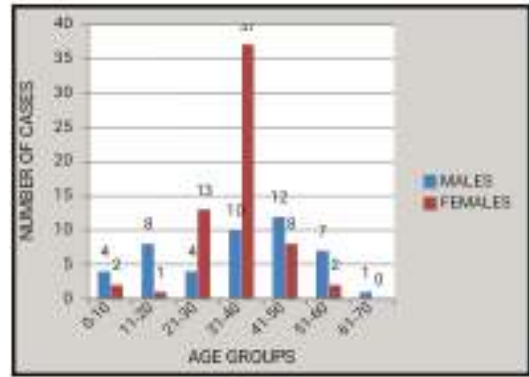


Figure 1: Distribution of patients according to age and sex

Table 1: Distribution of patients according to use of antiretroviral therapy

Sr. No.	Patient on ART	No. of patients (n=109)	% of patients
1	Yes	96	88.07
2	No	13	11.93

In the present study 96(88.07%) patients were already taking antiretroviral therapy and 13(11.93%) were not taking antiretroviral therapy.

Table 2: Distribution of patients according to site of affection

Sr. No.	Site	No. of patients (n=109)	% of patients
1	Oral Cavity	40	36.69
2	Ear	27	24.77
3	Neck	24	22.01
4	Nose	22	20.18
5	Oropharynx	14	12.84
6	Facial nerve	02	1.83
	Total	129*	

*multiple responses

In the present study majority of patients presented with symptoms related to oral cavity 40 (36.69%), Ear 27 (24.77%), Neck 24 (22.01), followed by Nose 22 (18.29%), Oropharynx 14 (12.84%) and facial nerve 2 (1.83%). Some patients had more than one manifestation. (Figure No.2).

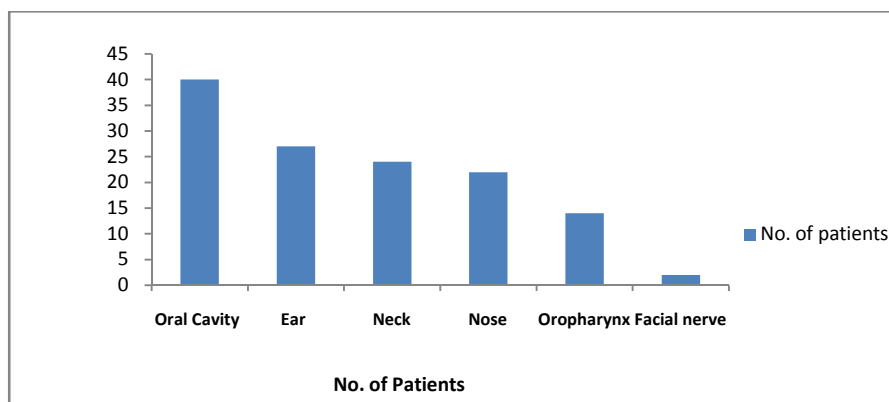


Figure 2: Distribution of patients according to site of affection

Table 3: Distribution of patients with various otorhinolaryngological manifestations according to their cd4 count

CD4 Count Otorhino- Laryngological Manifestation	I		II		III	
	< 200/ μ l (n= 23)		200 – 500/ μ l (n=56)		>500/ μ l (n=30)	
	No.	%	No.	%	No.	%
Oral candidiasis	13	56.52	9	16.07	-	-
Oral ulceration	03	13.04	08	14.28	02	6.67
Stomatitis	-	-	06	10.71	04	13.33
Pharyngitis	-	-	05	8.92	05	16.67
Herpes orolabialis	01	4.35	-	-	-	-
Otitis Media	05	21.74	09	16.07	07	23.33
Otitis Externa	-	-	02	2.57	01	3.03
Sensorineural Hearing Loss	01	4.35	01	1.78	-	-
Pinna Cyst	-	-	-	-	01	3.33
Herpes zoster oticus	-	-	01	1.78	-	-
Bells palsy	-	-	01	1.78	-	-
Lymphadenopathy	03	13.04	11	19.64	03	10.00
Parotid Swelling	-	-	-	-	05	16.67
Thyroid Cyst	-	-	01	1.78	-	-
NonHodgkins Lymphoma	01	4.35	-	-	-	-
Rhinosinusitis	02	8.70	09	16.07	03	10.00
Rhinitis	-	-	03	5.36	02	6.67
Vestibulitis	01	4.35	02	3.57	-	-

Otorhinolaryngological manifestations of HIV infection occur commonly with decrease in CD4 count. Patients are significantly affected with oral candidiasis ($Z=4.71$, $p<0.001$) at CD4 count below 500/ μ l.

Table 4: Average cd4 counts of various otorhinolaryngological manifestations

Sr. No.	Otorhinolaryngological manifestation	Mean CD4 count
1	Oral candidiasis	181 \pm 122.34
2	Oral ulceration	339 \pm 239.76
3	Stomatitis	459.70 \pm 196.97
4	Pharyngitis	505.80 \pm 229.34
5	Herpes orolabialis	54
6	Otitis Media	457.61 \pm 303.73
7	Otitis Externa	528.66 \pm 162.05
8	Sensorineural Hearing Loss	195.00 \pm 110.30
9	Pinna Cyst	798.00
10	Herpes zoster oticus	470.00
11	Bells palsy	434.00
12	Lymphadenopathy	448.35 \pm 390.15
13	Parotid Swelling	624.20 \pm 68.90
14	Thyroid Cyst	266.00
15	NonHodgkins Lymphoma	131.00

16	Rhinosinusitis	362.71 ± 195.17
17	Rhinitis	439.20 ± 196.62
18	Vestibulitis	293.66 ± 142.28

Amongst the various common otolaryngological manifestations occurring in HIV patients, oral candidiasis occurred at a mean CD4 count of 181±122.34, otitis media at 457.61±303.73, rhinosinusitis at 362.71±195.17, lymphadenopathy at 448.35 ± 390.15 and non Hodgkins lymphoma at a mean CD4 count 131.

DISCUSSION

All 109 HIV positive patients presenting with Otorhinolaryngological manifestations. The male: female ratio was 0.73:1. Deb T *et al*³ studied 40 patients and male to female ratio of 3.4:1 was found. In study conducted by Ondzotto G *et al*⁴ men represented 51% and women 49%. In study conducted by Sumit Sen *et al*⁵ there were 58 male and 36 female participants. Similar results found in Sulyman AB *et al*⁶ 51 males (57.3%) and 38 females (42.7%) with a sex ratio of 1.3:1. In the present study, most of the patients belonged to 31-40 years of age (43.12%), followed by 41-50 years of age (18.35%). The mean age was 34.73±12.52 yrs similar results were found in R.J. Hadderingh *et al*⁷ where patients ages ranged from 21 to 55 years, with an average age of 38 years and Somefun A *et al*⁸ studied 98 patients of age range between 15-69 with 83% in age group 20-49 yrs. J. F. Tirwomwe *et al*⁹ found mean age of the subjects was 42 (range 18–58) years. Age range of 30–49 years constituted 68.9% of study sample. In the present study majority of patients presented with symptoms related to oral cavity 40 (36.69%), ear 27 (24.77), neck 24 (22.01), followed by nose 22 (20.18%), oropharynx 14 (12.84%) and facial nerve 2(1.83%). Ondzotto G *et al*⁴ found the affection for otolaryngological manifestations in neck (40.5%), ear (24.9%), pharynx (17.3%), rhinosinus (13.3%), oral cavity and vestibule (2.7%) and larynx (1.3%). Sulyman AB *et al*⁶ reported nasal symptoms as commonest followed by oral/oropharyngeal, otological, constitutional symptoms and neck swellings. Otorhinolaryngological manifestations of HIV infection occur commonly with decrease in CD4 count. Patients are significantly affected with oral candidiasis ($Z=4.71$, $p<0.001$) at CD4 count below 500/ μ l. Bodhade AS *et al*¹⁰ found mean CD4 count of patients with oral lesions (207 cells/ mm^3) was less than in patients without oral lesions (291 cells/ mm^3) ($P = 0.002$). Oral candidiasis was found to be significantly correlated to a reduced CD4 cell count below 200 cells/ mm^3 . In Sontakke SA *et al*¹¹ out of 40 patients with oral candidiasis, 28 patients had CD4 count <200 (group A), 10 patients were in group, B (CD4 count 200-500 cell/ mm^3) and 2 patients in group C (CD4 >500

cell/ mm^3). Sumit Sen *et al*⁵ found average CD4 count of 212.61 in patients with oral candidiasis in their study and Brig Y K Sharma *et al*¹² found 105.28.

CONCLUSION

Majority of the cases belong to sexually active age group. Women form substantial subset of patients. Patients can present with various symptoms related to oral cavity (36.69%), nose (18.29%), neck (22.01%), oropharynx (12.84%) and ear (24.77%). The Otorhinolaryngological manifestations occur more frequently with fall in CD4 counts. Oral manifestations are common when CD4 count falls below 500/ μ L.

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