

Dermatological Manifestation in HIV Infected Patients Visiting to Sparsh ART Clinic Nepal: An Eight Years Retrospective Review

Yogendra Shah^{1,2*}, Dhan Kumar Panta² and Krishna Prasad Pant³

¹Everest International Clinic and Research Center, Kathmandu, Nepal

²National Zoonoses and Food Hygiene Research Centre, Kathmandu, Nepal

³Department of Microbiology, Far-Western University, Bhimduttanagar, Nepal.

Received May 08, 2019; Accepted May 13, 2019; Published September 08, 2019

ABSTRACT

Background: Acquired immune deficiency syndrome (AIDS) is a deadly disease caused by human immune deficiency virus (HIV) belonging to family retroviridae. In many low and middle income countries HIV/AIDS is the one of most important public health concern in those particular countries. Dermatological manifestations are common clinical findings among HIV infected patients. However, there was only little information available on dermatological manifestations about prevalence of HIV infected patients in Nepal.

Objective: The main objective of this study was conducted to determine the dermatological manifestation in HIV-infected patients at Sparsh ART clinic, Kathmandu.

Methods: HIV sero-positive patients having dermatological manifestations visiting to Sparsh ART clinic, Kathmandu duration of period from 2005-2012 were included in this study. The collected data was analyzed to determine the age-wise, sex-wise and year-wise dermatological manifestation of HIV infected cases. The collected data were analyzed by using Microsoft excel.

Results: A total number of four hundred and six dermatological manifestation patients were included in this study. The most common dermatological manifestation was fungal infection (64.78%) including oral thrush (54.47%) and other infections. The age wise distribution of dermatological manifestation in HIV infected patients were found in productive age 25-35 (59.11%) and least found in the age 15-25 (9.35%). Majority of dermatological manifestation were found in male HIV infected patients (96.79%) than female (3.20%).

Conclusion: This study showed high prevalence of dermatological manifestations (31.58%) in HIV-infected patients because more frequently with progression of HIV and decline in immune functions. Therefore, early diagnosis and management of skin disorders can also improve the quality of life of HIV-infected patients.

Keywords: HIV, Dermatological manifestation, ART, Sparsh, Nepal

INTRODUCTION

Acquired immune deficiency syndrome (AIDS) is a deadly disease caused by human immune deficiency virus (HIV) belonging to the genus lentivirus within the family of retroviridae, sub family orthoretrovirinae [1]. AIDS which weaken the host immune system then cause life threatening opportunistic infections, neurological disorders and malignancies. Globally, 36.9 million (31.1-43.9 million) people were living with HIV at the end of 2017. An estimated adult aged 15-49 years range from 0.8% (0.6-0.9%) worldwide are living with HIV, while the burden of epidemic continues to differ significantly between countries and regions. According to WHO African region reported that most severely affected approximately 1 in every 25 adults (4.1%) living with HIV that represents nearly two-thirds of

people living with HIV worldwide [2]. In many low and middle income countries HIV/AIDS as World Bank classifications of countries is the one of most important public health concern in those particular countries [2]. The

Corresponding author: Yogendra Shah, National Zoonoses and Food Hygiene Research Center, Tahachal, Kathmandu, Nepal, Tel: +977-9849610127; E-mail: yogendraa.90@gmail.com

Citation: Shah Y, Panta DK & Pant KP. (2019) Dermatological Manifestation in HIV Infected Patients Visiting to Sparsh ART Clinic Nepal: An Eight Years Retrospective Review. J Allerg Res, 1(2): 38-42.

Copyright: ©2019 Shah Y, Panta DK & Pant KP. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

disease was first defined by center for disease control (CDC) in United States of America in 1981 [3].

The current situation of HIV in Nepal is different from when the first case was diagnosed in 1981. Nepal is low prevalence country for HIV/AIDS (0.3%) in 2011 with an adult ages range from 15-49. According to WHO estimates, Nepal is home of people living with HIV about 50, 200 and 4 out of every five infections have been occurred through sexual transmission [4]. However, most of HIV people infected among the drugs inject users, sex workers, and seasonal labor migrants, i.e., (migrating to high HIV prevalence areas in India [4] because Nepal has an open porous border with India and Nepalese citizens visit the bordering area of India for different purposes) are the key populations at higher risk groups in HIV [5]. Dermatological manifestations are seen at every stage of HIV/AIDS and are often the presenting clinical features [6-10]. Approximately 90% of HIV-infected patients develop cutaneous diseases, which may be infectious or noninfectious. These skin manifestations not only act as markers but also reflect the underlying immune status [11]. HIV/AIDS occurrence is a major health problems facing in all countries in the world [12]. Cutaneous manifestations are common findings in HIV infected patients [13]. It showed that cutaneous lesions were among the first recognized clinical manifestations of HIV infection [14] and the prevalence of skin lesions was associated with the progression of HIV disease [15].

Skin, as the largest organ of the human body, plays a pivotal role in sustaining immunity by acting as a barrier to the outside world. Therefore, dermatological manifestations of AIDS are important healthcare concerns in HIV infected patients [16]. HIV infection may result in the development of various dermatological complications, some of which are consequences of superimposed opportunistic infections [17]. To date, there have been several reports detailing the high frequency of dermatological manifestations in HIV infected patients. Similarly, studies in India and France revealed that

dermatological manifestations among HIV patients can have prevalence as high as 96% and 65.3%, respectively [18,19].

At present, diagnosis and management of HIV infected persons; dermatological manifestation in Nepal is based on patient’s clinical symptoms due to lack of dermatological manifestation diagnostic facility. Considering the evidently high prevalence of dermatological manifestations observed among HIV patients, this study is the first we know to evaluate the occurrence of dermatological manifestations in Nepalese HIV patients in a clinical setting. However, there are only few studies on the prevalence of dermatological manifestation in HIV infected person. This study would initiate in establishing epidemiological studies and its implication for crafting appropriate future intervention of dermatological manifestation in HIV infected in Nepal. The information generated through this retrospective study would be significant by providing necessary information to the concerned authority for implementing prophylactic measures, monitoring and planning for surveillance and disease management.

METHODS

An eight years retrospective review data from 2005-2012 were collected from Sparsh ART (antiretroviral therapy) Clinic Sanepa, Kathmandu, Nepal (program support by Global fund). A standard question was developed and clinical characteristic feature were categorized. A total 1286 HIV infected positive patients visiting to the Sparsh ART Clinic, only 406 patients were further selected who had dermatological manifestation for their treatment according to NASC [20].The collected data was analyzed to find out the age-wise, sex-wise, year wise and dermatological manifestation of HIV infected cases. The collected data were analyzed by using Microsoft excel 2017.

RESULTS

Year wise positivity of dermatological manifestation of HIV infected patients was shown in **Table 1**.

Table 1. Year wise positivity of dermatological manifestation of HIV infected patients.

Dermatological manifestation				
Year	Bacterial skin infection	Fungal skin infection	Viral skin infection	Total
2005	7 (19.44)**	23 (63.88)	6 (16.66)	36 (100)
2006	16 (37.20)	15 (34.88)	12 (27.90)	43 (100)
2007	18 (39.13)	21 (45.65)	7 (15.21)	46 (100)
2008	12 (14.81)	44 (54.32)	25 (30.86)	81 (100)
2009	2 (3.33)	49 (81.66)	9 (15)	60 (100)
2010	0	42 (85.71)	7 (14.28)	49 (100)
2011	0	37 (78.72)	10 (21.27)	47 (100)
2012	0	32 (72.71)	12 (27.27)	44 (100)
Total	55 (13.54)	263 (64.78)	88 (21.68)	406 (100)

**Parenthesis indicate percentage

The age wise distribution of DI of HIV infected patients each year from 2005-2012 and low in the age group from 15-25 (Table 2). revealed that the prevalence was found in age group 25-35

Table 2. Age wise distribution of dermatological manifestation of HIV infected patients.

Year	15-25	25-35	>35	Total
2005	5 (13.88)**	24 (66.66)	7 (1.94)	36 (100)
2006	2 (4.65)	33 (76.74)	8 (18.60)	43 (100)
2007	9 (19.56)	29 (63.04)	8 (17.39)	46 (100)
2008	6 (7.40)	47 (58.02)	28 (34.56)	81 (100)
2009	7 (11.66)	31 (5.16)	22 (36.66)	60 (100)
2010	4 (8.16)	31 (63.26)	14 (28.57)	49 (100)
2011	2 (4.25)	22 (46.80)	23 (48.93)	47 (100)
2012	3 (6.81)	23 (52.27)	18 (40.90)	44 (100)
Total	38 (9.35)	240 (59.11)	128 (31.52)	406 (100)

**Parenthesis indicate percentage

The highest number of DI was observed in the age group from 25-35 (59.11%, 2008) and least found in the year 2005 among age group >357 (1.94%) (Table 2).

As shown in Figure 1 categorization of dermatological manifestation of HIV infected patients from 2005 to 2012. Oral thrush was mostly found in HIV infected patients as the compared the others DI. The highest number of

dermatological manifestation were observed in the oral thrush 221 (54.44%) followed by herpes zoster 74 (18.23%). The sex-wise distribution of DI of HIV infected patients indicated that more males were infected with DI compared to females with an overall male to female ratio [30.23:1] (Table 3). The highest numbers of male were observed in the year 2008, 77 (95.06%) followed by 2009 and least number observed in the year 2005 (Table 3).

Table 3. Sex wise distribution of dermatological manifestation of HIV infected patients.

Year	Male	Female	Total
2005	35 (97.22)**	1 (2.7)	36 (100)
2006	40 (93)	3 (6.97)	43 (100)
2007	45 (97.82)	1 (2.17)	46 (100)
2008	77 (95.06)	4 (4.93)	81 (100)
2009	59 (98.33)	1 (1.66)	60 (100)
2010	49 (100)	0	49 (100)
2011	47 (100)	0	47 (100)
2012	41 (93.18)	3 (6.81)	44 (100)
Total	393 (96.79)	13 (3.20)	406 (100)

**Parenthesis indicate percentage

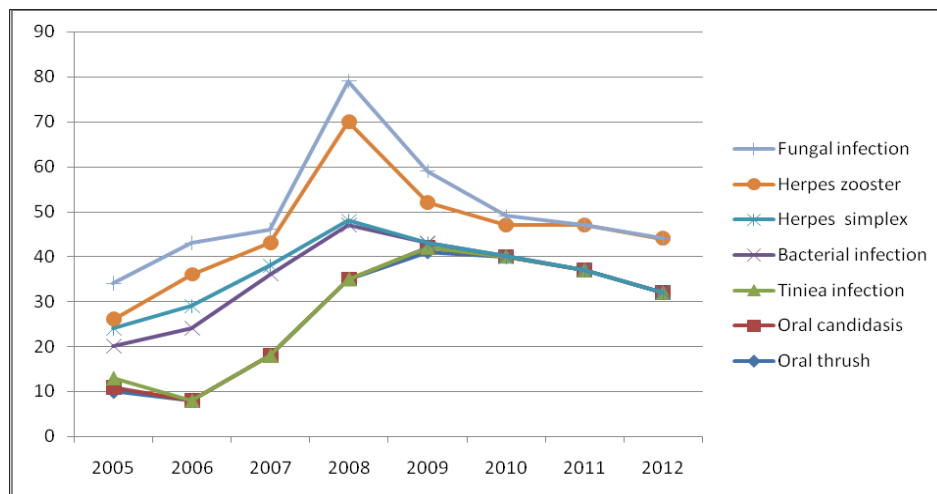


Figure 1. Categorization of dermatological manifestation of HIV infected patients from 2005 to 2012.

DISCUSSION

This present retrospective study of eight year data demonstrates the high prevalence and also have several dermatological manifestations infections occurred among the HIV infected positive patients visiting Sparsh ART clinic at Kathmandu, Nepal. Dermatological conditions are the most common manifestation of HIV infection and occur in about 90% of infected individuals. Our present study also revealed that dermatological manifestations are prevalent among the Nepalese HIV-positive patients in ART clinical settings. The prevalence of dermatological manifestations in our present study (31.58%) was considerably lower than studies execute in Tanzania (65.3%) [21], France (65.3%) [19], Taiwan (91.4%) [18] and India (96%) [22].

The most common dermatological manifestations were found in fungal skin infection among oral thrush (64.78%) which was not similar to some previous study carried out by (18%) [23], (23.5%) [24] and (68%) [25]. The frequent findings of dermatological manifestations in HIV infected individuals were fact that skin itself is an immune system containing antigen presenting (Langerhans) cells. Hence, previous study support that the numbers of Langerhans cells are decreased in AIDS because Langerhans cells are targets in HIV infection [26].

Viral skin infection 88 (21.68%), Herpes zoster (18.22%) and Herpes simplex (2.95%) are the most common dermatological manifestations conditions among HIV patients. The previous studies in viral infection has reported that less prevalence as perform by 5.3% [23], 4.7% [27] and 3.0% [28]. This study (age wise distribution of dermatological manifestations in HIV infected patients based on eight year retrospective study), 59.11% of a total of 406 patients screened for HIV infected were confirmed positive having dermatological manifestations, with majority in the age group 25-35 years and with preponderance (96.79%). These findings are consistent with other studies in

Nepal [29,30]. Therefore, different research studies showed that HIV infected patients were high risk of opportunistic infections owing weaken or break down of immune system so that commonly dermatological manifestations occurred by different infections like viral, bacterial and fungal.

CONCLUSION

Dermatological manifestations are highly prevalent in the HIV infected patients; however, the pattern of skin diseases varies from person to person visiting Sparsh ART clinic. Dermatological complications of HIV/AIDS arise from a variety of conditions with various etiologies. Therefore, careful considerations should be given to timely diagnosis and prompt treatment of dermatological complications among HIV patients in Nepal and across the globally. Therefore, early diagnosis and management of skin disorders can improve the quality of life of HIV-infected patients.

ACKNOWLEDGEMENT

We would like to express thank Kaushila Devi Memorial Allergy (KMDA) Trust, Kathmandu, Nepal for providing opportunity to perform the research work on dermatological manifestation in HIV infected patient. We would like to also thank all participating patients and staffs for their kind support at Sparsh ART clinic, Nepal.

REFERENCES

1. Luciw PA (1996) Human immunodeficiency viruses and their replication. In: Fields BN, editor. Virology. 3rd Edn. Philadelphia: Lippincott-Raven, pp: 1881-1952.
2. (2018) Global HIV and AIDS statistics - Fact sheet. Available at: <http://www.unaids.org/en/resources/fact-sheet>
3. CDC (2001) Morbidity and mortality weekly report: First reports of AIDS. 1: 20. Available at: <https://www.cdc.gov/mmwr/PDF/wk/mm5021.pdf>

4. (2011) USAID Saath-Saath Project/FHI 360 report. Available at: <https://www.usaid.gov/nepal/hivaids>
5. Nepal B (2007) Population mobility and spread of HIV across the Indo-Nepal border. *J Health Popul Nutr* 25: 267-277.
6. Kumarswamy N, Suniti S, Madhivanan P (2000) Dermatologic manifestations among immunodeficiency virus patients in South India. *Int J Dermatol* 39: 192-195.
7. Wang J, Rokiah I (1999) Mucocutaneous manifestations of HIV Infection: A retrospective analysis of 145 cases in a Chinese population in Malaysia. *Int J Dermatol* 38: 457-463.
8. Warner LC, Fischer BK (1986) Cutaneous manifestations of AIDS. *Int J Dermatol* 25: 337-350.
9. Rajagopalan B, Jacob M, George S (1996) Skin lesions in HIV positive and HIV negative patients in South India. *Int J Dermatol* 35: 489-492.
10. Lim W, Sadick N, Gupta A (1990) Skin diseases in children with HIV infection and their acquisition with degree of immunosuppression. *Int J Dermatol* 29: 24-30.
11. Coldiron BM, Bergstresser PR (1989) Prevalence and clinical spectrum of skin disease in patients with human immunodeficiency virus. *Arch Dermatol*, p: 125.
12. Surasiengsunk S, Kiranandana S, Wongboonsin K, Garnett GP, Anderson RM, et al. (1998) Demographic impact of the HIV epidemic in Thailand. *AIDS* 12: 775-784.
13. Stingl G, Hauser C, Wolff K (1993) The epidermis: An immunological microenvironment. In: Fitzpatrick TB, Eisen AZ, Wolff K, et al., eds. *Dermatology in General Medicine*. New York: Mc Graw-Hill, pp: 172-180.
14. Spira R, Mignard M, Doutre MS (1998) Prevalence of cutaneous disorders in a population of HIV infected patients. *Arch Dermatol* 134: 1208-1212.
15. Hira SK, Wadhawan D, Kamanga J (1998) Cutaneous manifestation of human immunodeficiency virus in Lusaka, Zambia. *J Am Acad Dermatol* 19: 451-457.
16. Kouznetsov L, Kouznetsov AV (2009) Knowledge and attitude regarding human immunodeficiency virus/acquired immunodeficiency syndrome in dermatological outpatients. *J Eur Acad Dermatol Venereol* 23: 927-933.
17. Cook GC, Manson P, Zumla A (2009) Manson's tropical diseases. *Dermatological problems*. Chapter 19, 22nd Edn, pp: 333-373.
18. Tzung TY, Yang CY, Chao SC, Lee JY (2004) Cutaneous manifestations of human immunodeficiency virus infection in Taiwan. *Kaohsiung J Med Sci* 20: 216-224.
19. Reynaud-Mendel B, Janier M, Gerbaka J, Hakim C, Rabian C, et al. (1996) Sexually transmissible diseases center, Hôpital Saint-Louis, Paris, France frequencise dermatologic findings in HIV-1-infected patients: A prospective study with emphasis on CD4+ cell count. *Dermatology* 192: 325-332.
20. NCASC Annual Report (2008/2009) Department of Health Services, Government of Nepal MOH and Population Department of Health Services, Kathmandu.
21. Repentigny L, Lewandowski D, Jolicoeur P (2004) Immunopathogenesis of oropharyngeal candidiasis in human immunodeficiency virus infection. *Clin Microbiol Rev* 17: 729-759.
22. Sud N, Shanker V (2009) Mucocutaneous manifestations in 150 HIV-infected Indian patients and their relationship with CD4 lymphocyte counts. *Int J STD/AIDS* 20: 771-774.
23. Mgonda, Chale (2011) The burden of co-existing dermatological disorders and their tendency of being overlooked among patients admitted to Muhimbili National Hospital in Dar salaam, Tanzania. *BMC Dermatol* 11: 8.
24. Wichai S (2001) Cutaneous manifestations in HIV positive patients. *Southeast Asian J Trop Med Public Health* 32: 171-176.
25. Talle M, Hamidu IM, Nasir IA (2017) Prevalence and profile of pulmonary fungal pathogens among HIV-infected patients attending university of Maiduguri Teaching Hospital, Nigeria. *Egypt J Int Med* 29: 11-15.
26. Tschachler E, BergstresserPR, Stingl G (1996) HIV-related skin diseases. *Lancet* 348: 659-663.
27. Takalkar AA, Saiprasad GS, Prasad VG, Madhekar NS (2012) Study of opportunistic infections in HIV seropositive patients admitted to community care centre (CCC), KIMS Narketpally. *Biomed Res* 23: 139-142.
28. Singh A, Bairy I, Shivananda PG (2003) Spectrum of opportunistic infections in AIDS. *Ind J Med Sci* 57: 16-21.
29. Subedi BK (1995) Seasonal migration in western Nepal and its relation to HIV transmission. *JNMA* 33: 30-32.
30. Sharma S, Dhungana GP, Pokherel BM, Rijal BP (2009) Clinical features of HIV/AIDS and various opportunistic infections in relation to antiretroviral status among HIV seropositive individuals from central Nepal. *Kathmandu University Medical Journal* 7: 335-359.