

Knowledge and Awareness on HIV/AIDS among College Students in A University Hospital Setting

Research Article

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Abstract

Aim: The aim of the present survey is to assess the degree of knowledge and awareness about the basics of HIV virus, mode of transmission and oral manifestations of AIDS among undergraduate students at an university hospital setting, Chennai.

Materials and Methods: A Questionnaire based study was conducted to assess the degree of knowledge and awareness about the basics of HIV virus, mode of transmission and oral manifestations of AIDS among 100 undergraduate students at an university hospital setting, Chennai. All participants were provided with a pre structured questionnaire comprising of 28 questions related to Human immunodeficiency virus (HIV) and Acquired immune deficiency syndrome (AIDS) and answering was completely self based. The questions were divided into 3 segments (a) basics of Human immunodeficiency virus (b) mode of transmission and (c) oral manifestations of AIDS. The possible options chosen by the participants were tabulated and the percentile for each question was calculated.

Results: Among the 100 participants, 95% of the participants gave correct answers for question on the basics of Human immunodeficiency virus. 89% participants chose the correct answers under the section, mode of transmission and 71% of the participants were aware about the oral manifestation of AIDS.

Conclusion: The study was to assess the knowledge of interns about HIV/AIDS. As dental surgeons are exposed to patients with and without AIDS, it is essential that they are aware of the methods of transmission of this viral disease and also are able to diagnose undiagnosed cases through oral manifestation. This would help prevent transmission of this deadly disease.

Keywords: AIDS; Autoimmunity; Human Immunodeficiency Virus.

Introduction

Approximately 38.8 million people are living with HIV worldwide and around 1.2 million deaths have been recorded upto 2015 [1]. The possibility of exposure to blood borne pathogens like Hepatitis B (HBV), Hepatitis C (HCV) and HIV put health care workers at high risk [2-4]. Similarly, patients are at risk of transmission from health care workers but this risk is considered to be extremely low according to the available literature [2]. In particular, dental care professionals are also exposed to a wide range of infectious pathogens like HIV, HBV, Herpes B virus, HBC virus and many others while performing dental procedures [5]. However, the risk of contracting HIV through needle stick or cut exposure is extremely low (0.3%) as 99.7% of the exposures to HIV contaminated blood do not cause infection [6]. Therefore,

the occupational risk of acquiring HIV/AIDS among dental care providers is low but they are at ten folds greater risk than other individuals for becoming carriers of HBV [7, 8].

Dental professionals including dental students should realize that they are ethically liable to treat their patients' with HIV/AIDS. However, they should have adequate knowledge of HIV related transmission and positive attitudes in order to deliver their responsibility of treating patients with HIV/AIDS. It is important to assess the knowledge and attitudes of dental students which helps in understanding their preparedness for treating HIV/AIDS patients and if any modifications have to be incorporated into the dental curriculum to instil positive attitudes in dental students. Thus, the current study evaluated the knowledge and awareness of HIV/AIDS among college students in an university

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hospital setting.

Materials and Methods

A questionnaire consisting of 28 questions related to HIV/AIDS was formulated. It was divided into 3 segments, (a) basics of Human immunodeficiency virus (b) mode of transmission and (c) oral manifestations of AIDS.

The questionnaire was distributed to 100 interns at Saveetha dental college and hospitals, Chennai. Students were asked to choose the best answer from the options given. The data was then collected and the percentile distribution for each question was represented using pie charts.

Results

Basics Of HIV/AIDS

Out of the 100 participants in the present study, all of them were aware of the fact that HIV causes AIDS (FIGURE 1). When questioned about the structure of the virus, 99 participants gave the correct answer as it being an enveloped RNA virus. 98 participants chose reverse transcriptase as the enzyme involved in transcription of HIV RNA to proviral DNA. 97 participants were also aware that the cell group affected by the HIV virus are the

CD4 helper cells. Questions with regard to the diagnosis of HIV/AIDS was also put forth. 97 participants agreed that ELISA is the screening test, and western blot is not. Western blot is a confirmatory test for HIV/AIDS.

Mode Of Transmission Of HIV

89% of the answers obtained were correct. When questions with regard to transmission of the disease were put forth, 89 participants on an average gave the correct answer. 98 participants agreed that needle stick injuries could lead to the transmission of the virus. 99 participants agreed that medical professionals are at a higher risk of exposure to such an infectious disease. 77 participants contradicted the fact that saliva could be a vehicle of transmission of the disease. When questioned about sterilization protocols that must be followed for affected patients, 88 participants agreed that not all sterilization procedures kill HIV viral spores. 99% feel that effective infection control is essential for prevention of transmission of diseases (FIGURE 2).

Oral Manifestations Of AIDS

71% of the participants of the current study were about the oral manifestations of AIDS (FIGURE 3).

Further questions with regard to each oral manifestation were put forth and the responses were tabulated.

Figure 1. HIV causes AIDS.

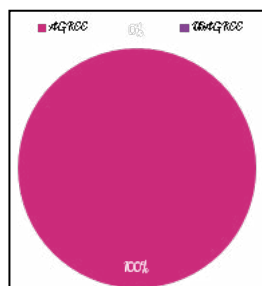


Figure 2. Can HIV patient infect dentist and dental co-workers?

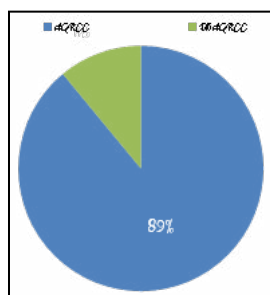


Figure 3. Aware about the oral manifestations of AIDS?

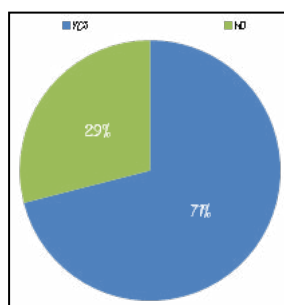


Table 1. Basics Of Human Immunodeficiency Virus (HIV).

		AGREE	DISAGREE
1	HIV is an enveloped RNA virus	99*	1
2	HIV cause AIDS	100*	0
3	Transcription of HIV RNA to proviral DNA is by reverse transcriptase enzyme	98*	2
4	ELISA is the screening test for HIV	97*	3
5	CD4 helper cells are not attacked by the virus	3	97*
6	Western blot is the screening test for HIV	5	95*
7	A negative test indicates that is person is free of the virus	17	83*

Table 2. Modes Of Transmission Of HIV.

		AGREE	DISAGREE
1	HIV patients can infect dental workers	89*	11
2	Needle stick injury can transmit the diseases	98*	2
3	Hepatitis B is more communicable than HIV	68*	32
4	Medical staff are more prone for cross infection	99*	1
5	Saliva is a vehicle for transmission of HIV	23	77*
6	All sterilization methods kill HIV viruses	12	88*
7	Sharing the same needle will not transmit the disease	2	98*
8	Proper protective equipment protocol should be followed	99*	0

Table 3. Are The Following Oral Manifestations Of Aids.

		YES	NO
1	Oral candidiasis	97	3
2	Necrotising ulcerative periodontitis	83	17
3	kaposi sarcoma	95	5
4	Recurrent aphthous stomatitis	26	74
5	Linear gingival erythema	25	75
6	Xerostomia	89	11
7	Non Hodgkins lymphoma	64	36
8	Cytomegalovirus	59	41
9	Herpes zoster	74	26
10	Oral hairy leukoplakia	87	13
11	Herpes simplex	85	15
12	Lichen planus	87	13
13	Human papilloma virus	57	43

Discussion

Newer diseases are having a profound worldwide impact on society and on the delivery of medical and oral health care. Acquired immunodeficiency syndrome (AIDS), is caused by infection with human immunodeficiency virus (HIV). Spread by blood borne and sexual contact, HIV has infected over 36.1 million people in the world and according to joint UNAIDS (United Nations Programme on HIV/AIDS) and WHO, 1600 new cases are coming up every day [9, 10].

HIV infection can be transmitted through unprotected sexual intercourse with an infected partner. transmission routes also in-

clude injection or transfusion of contaminated blood or blood products, infection through artificial insemination, skin grafts, and organ transplants is also possible(11), sharing unsterilized injection equipment that was previously used by an infected person [12] and maternal-fetal transmission (during pregnancy, at birth, and through breastfeeding) [13]. Occupational HIV infections of healthcare or laboratory workers may occur, but this mode of infection is not frequent [14]. Transmission of HIV from an infected patient to a health-care worker has been documented after parenteral or mucous membrane exposure to blood. However, this risk is less than 1%, is limited to exposure to blood, and can be further minimized through the availability of more effective Antiretroviral therapy (ART)[15].

Undiagnosed or untreated infection with HIV, results in progres-

sive loss of immune function marked by depletion of the CD4⁺ T lymphocytes (CD4), leading to opportunistic infections and malignancies characteristic of Acquired Immunodeficiency Syndrome (AIDS)(16). Oral manifestations of HIV are common and have been important in identification of patients harboring the HIV virus and in predicting the decline in their immune system. Early recognition, diagnosis, and treatment of HIV-associated oral lesions may reduce morbidity. Orofacial manifestations are among the earliest and most common clinical signs of pediatric HIV disease too. Early diagnosis of perinatally exposed infants and children is especially important because the intervals between infection, development of AIDS, and death are compressed in pediatric patients. Early diagnosis allows prompt institution of both multi-drug therapy, which appears to be most effective when instituted early, and prophylactic therapy to forestall life-threatening opportunistic infections.

Oral Manifestations Of AIDS

Candidiasis: *Candida albicans* is the predominant yeast that colonizes the oral cavity of both healthy subjects and HIV-infected individuals in the developed and developing world. However, oral pseudo-membranous candidiasis still remains the most common fungal infection of HIV disease; it has been associated with more frequent progression of HIV to AIDS and has been also used as a clinical marker to define the severity of HIV infection [17], with pseudomembranous candidiasis usually followed by erythematous candidiasis.

Hairy Leukoplakia: Oral Hairy Leukoplakia (OHL) is a clinical manifestation of Epstein-Barr virus (EBV) infection almost exclusively found in patients with untreated advanced HIV disease and typically occurs on the lateral border of the tongue of HIV infected individuals and other groups of immunocompromised individuals [18].

Kaposi Sarcoma: Kaposi's sarcoma (KS) is a malignant, multifocal systemic disease that originates from the vascular endothelium and has a variable clinical course. KS is caused by human herpes virus 8 (HHV-8), which is transmitted sexually or via blood or saliva. The most frequently involved site is the skin, but mucous membranes, the lymphatic system, and viscera, in particular the lung and gastrointestinal tract, can also be involved. In patients with HIV disease, KS usually arises when the CD4⁺ T cell count is less than 200 [19, 20].

Non Hodgkins Lymphoma: Non-Hodgkin's Lymphoma (NHL) is the second most common HIV-associated tumor. As with KS, the frequency of this tumor has fallen with the introduction of ART; however, it is still a very common tumor of HIV-infected individuals in the developing world. A variety of NHLs can arise in the mouth in HIV disease; in fact, a rare type called plasmablastic lymphoma seems to nearly always arise exclusively in the mouth [21].

Periodontal Diseases: Gingival and periodontal disease is common in HIV infection, particularly in individuals residing in or who have migrated from the developing world. HIV-gingivitis was renamed as Linear gingival erythema, HIV-necrotising gingivitis was renamed as Necrotising (ulcerative) gingivitis (NUG), HIV-periodontitis was renamed as Necrotising (ulcerative) periodontitis (NUP).

As the Oral manifestations are among the earliest and most important indicators of HIV infection, a better understanding of these manifestations in both adults and children is a must for all dental health care workers. Early recognition, diagnosis, and treatment of HIV-associated oral lesions may reduce morbidity of the adults. And for this, we need to be aware of the disease course of HIV and AIDS.

The present study provides an insight of the degree of knowledge and awareness of HIV/AIDS among interns at an university hospital setting. This would help us in understanding if a need for the use various other educational tools is required or not.

Conclusion

The study was a genuine endeavor to assess the knowledge of dental interns about HIV/AIDS. As dental surgeons are exposed to patients with and without AIDS, it is essential that they are aware of the methods of transmission of this viral disease and also are able to diagnose undiagnosed cases through oral manifestation. This would help prevent transmission of this deadly disease. The limitation of our study is that it was conducted in one institute. Further assessment can be done by conducting surveys in different universities and this would also help us know if steps have to be taken to spread knowledge about the same.

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