

Awareness Of Implant Placement In Hiv Patients Among Dental Students

Research Article

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Abstract

Introduction: Acquired immune deficiency syndrome (AIDS) is a condition caused by the human immunodeficiency virus (HIV). In 2012 it affected nearly 30 million people worldwide. Patients suffering from AIDS experience an immune depression, caused by HIV infection, which reduces the host's resistance to pathogens.

Aim: The aim of the study was to assess the knowledge and awareness of implant placement in HIV patients among dental students.

Materials and Method: A cross sectional questionnaire was designed and distributed to 100 dental students. Questionnaire includes email address, questions about periimplantitis, peri mucosal implantitis, post exposure prophylaxis and standard precautions. Data was collected, statistically analysed and results were obtained.

Results: The results observed in our study showed that awareness and knowledge of implant placement in HIV patients among dental students were high.

Conclusion: Various awareness programs should be conducted to educate more about causes, management of periimplantitis, peri implant mucositis, oral lesions associated with HIV and post exposure prophylaxis in case of injury with a known case of HIV infection among dental students.

Keywords: Human Immunodeficiency Virus; Post Exposure Prophylaxis; Periimplantitis; Peri Mucosal Implantitis.

Introduction

Acquired immune deficiency syndrome (AIDS) is a condition caused by the human immunodeficiency virus (HIV). In 2012 it affected nearly 30 million people worldwide. Patients suffering from AIDS experience an immune depression, caused by HIV infection, which reduces the host's resistance to pathogens [1]. HIV belongs to lentivirus that causes AIDS, a condition in humans in which the immune system begins to fail, leading to life threatening opportunistic infections. Infection with HIV occurs by the transfer of blood, semen, vaginal fluid, or breast milk. After primary infection with HIV, rapid virus replication and an early burst of viremia are often evident. During this early period, an estimated 50–75% of infected persons develop an initial infection with in

4-6 weeks characterized by flu like symptoms, high level of HIV in the peripheral circulation, high levels of p24 antigenemia and a significant drop in the number of circulating CD4+ T cells. This is followed by a dramatic decline in plasma viremia with resolution of acute syndrome and CD4+ cells may rebound to 80–90% of their original level. In numerous patients the acute phase of HIV infection is commonly followed by a period of clinical latency that may last up to 10 years or more, during which time few cells in peripheral blood are infected with HIV and viremia is minimal or absent. During this period, disease symptoms are usually mild or not evident while immune deterioration progresses with gradual decrease in CD4+ T cells. The final phase of infection is characterized by increased virus expression and distribution and by the emergence of multiple disease symptoms indicative of AIDS.

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Received: February 25, 2021

Accepted: March 04, 2021

Published: March 18, 2021

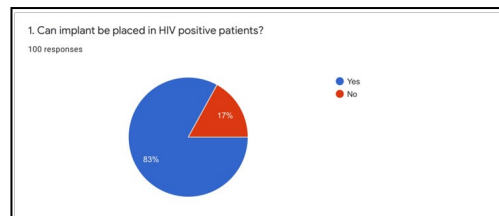
Citation: Kuzhalvai Mozhi, Dhanraj Ganapathy. Awareness Of Implant Placement In Hiv Patients Among Dental Students. *Int J Dentistry Oral Sci.* 2021;08(03):2076-2080. doi: <http://dx.doi.org/10.19070/2377-8075-21000408>

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By this time the patients have a severely depleted level of CD4+ cells, leading to collapse of their immune system. As the patient's level of CD4+ T-cell drops below 200 cells/ll of blood, the risk of developing life-threatening opportunistic infections and malignancies increases greatly [2].

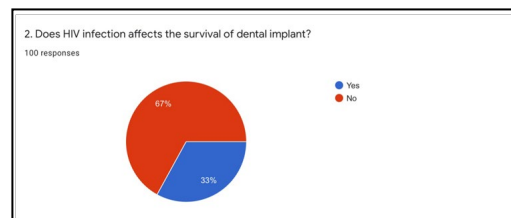
Antiretroviral therapy has been proven to be a lifesaving approach for many millions infected [1, 3]. Advances in HIV treatment have improved since the first antiretroviral, zidovudine, in 1987. A monotherapy of nucleoside reverse transcriptase inhibitor (NRTI) provided dramatic survival benefit but did not sustain viral progression. In the 1990s, protease inhibitors (PI) changed

Figure 1. Can implant be placed in HIV positive patients.



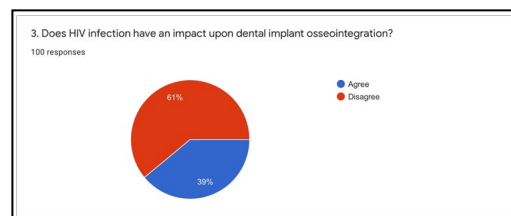
Among the study population, majority (67%) told that HIV infection does not affect the survival rate of dental implant where as 33% of the study population told that HIV infection affects the survival rate of dental implant placement.

Figure 2. Does HIV infection affects the survival of dental implant.



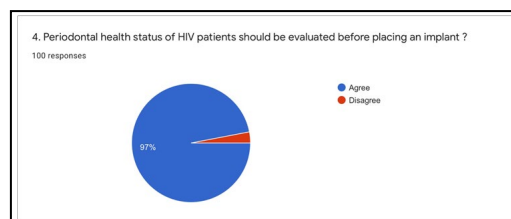
Among the study population, majority (61%) disagreed that HIV infection have impact upon dental implant osseointegration where as 39% of the study population agreed that HIV infection have impact upon the dental implant osseointegration.

Figure 3. Does HIV infection have an impact upon dental implant osseointegration.



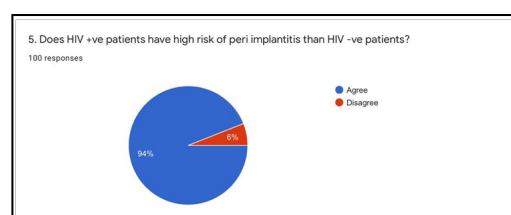
Among the study population, majority (97%) agreed that periodontal health status of HIV patients should be evaluated before placing an implant where as 3% of the study population disagreed that periodontal health status of HIV patients should be evaluated before placing an implant.

Figure 4. Periodontal health status of HIV patients should be evaluated before placing an implant.



Among the study population, majority (94%) agreed that HIV+ve patients have high risk of periimplantitis than HIV-ve patients where as 6% of the study population disagreed that HIV+ve patients have high risk of periimplantitis than HIV-ve patients.

Figure 5. Does HIV +ve patients have high risk of peri implantitis than HIV -ve patients.



Among the study population, majority (94%) agreed that HIV+ve patients have high risk of peri implant mucositis than HIV-ve patients where as 6% of the study population disagreed that HIV+ve patients have high risk of peri implant mucositis than HIV-ve patients.

the course of HIV epidemic. Combination therapy led to rapid reduction of HIV RNA and improved immune function. Advances in the last and availability of antiretroviral therapy have led to dramatic reductions in the mortality and morbidity of HIV patients [4]. Despite the adverse effects, the use of antiretroviral therapy has led HIV-positive patients to maintain low viral loads and normal CD4 counts making them more likely to opt for an elective surgery such as dental implants.

Creating an empathetic environment for treatment of HIV/AIDS patients in dental operator is an important challenge faced by the clinicians. The entire team in the clinic including the doctors, reception staff, assistants, dental hygienists and nurses should contribute sufficiently to build a congenial environment for management of these patients [5]. Aim of the study is to assess the knowledge of implant placement in HIV patients among dental students.

Materials and Methods

The study was conducted during the academic year december 2020 among the dental students.

Study Sample Size: The descriptive cross sectional study was based among 100 dental students.

Inclusion and Exclusion Criteria: Dental students who were studying 2rd, 3rd year, and final year. Dental students who are not willing to participate were excluded in this study.

Questionnaire: The questionnaire was not targeted at a specific group but all dental students in general to assess their knowledge of implant placement in HIV patients among the dental students. A validated questionnaire was distributed among the dental students in this study. This included questions about impact of HIV infection in implant osseointegration, Periodontal evaluation, oral health assessment before implant placement, peri implant mucositis, periimplantitis. The data extracted were tabulated, statistically analysed and results were obtained using SPSS software.

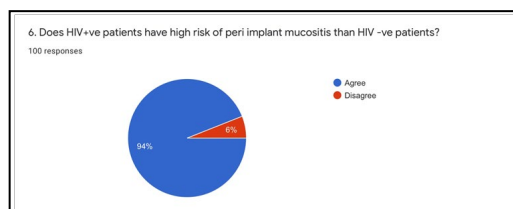
Results

Among the study population, majority (83%) aware that implant can also be placed in HIV positive patients whereas 17% of the study population told that dental implant is contraindicated in HIV positive patients.

Discussion

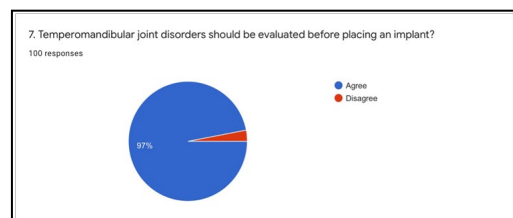
While providing oral care to patients with HIV infection, consideration has to be given to the infectious nature and ethical dilemma due to social stigma of the illness. It is unethical to refuse to treat patients based on their HIV status. It is most appropriate for oral health care workers to provide relevant information and obtain informed consent from patients before examination and treatment. Confidentiality is also an important consideration as most individuals do not share their HIV status with either family or friends. Hence any information provided to dental profes-

Figure 6. Does HIV +ve patients have high risk of peri implant mucositis than HIV -ve patients.



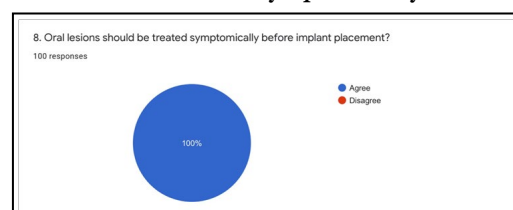
Among the study population, majority (97%) agreed that temporomandibular joint disorders should be evaluated before placing an implant where as 3% of the study population disagreed that temporomandibular joint disorders should be evaluated before placing an implant.

Figure 7. Temporomandibular joint disorders should be evaluated before placing an implant.



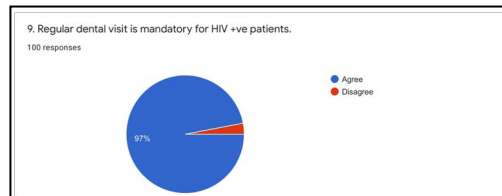
All of the study population (100%) agreed that oral lesions which is commonly seen in HIV infected person should be treated symptomatically before implant placement.

Figure 8. Oral lesions should be treated symptomatically before implant placement.



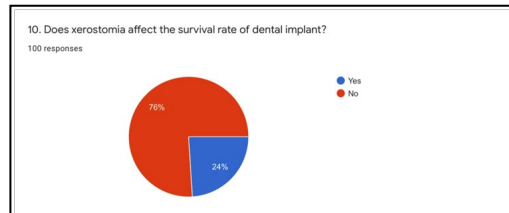
Among the study population, Majority (97%) agreed that regular dental visit is mandatory for HIV+ve patients whereas 3% of the study population disagreed that regular dental visit is necessary for HIV+ve patients.

Figure 9. Regular dental visit is mandatory for HIV +ve patients.



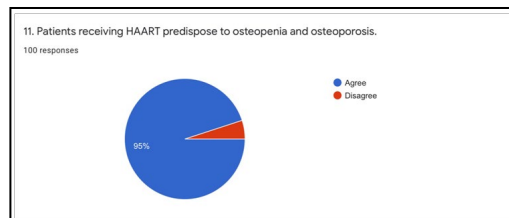
Among the study population, majority (76%) told that xerostomia does not affect the survival rate of dental implant where as 24% of the study population told that xerostomia affects the survival rate of dental implant placement.

Figure 10. Does xerostomia affect the survival rate of dental implant.



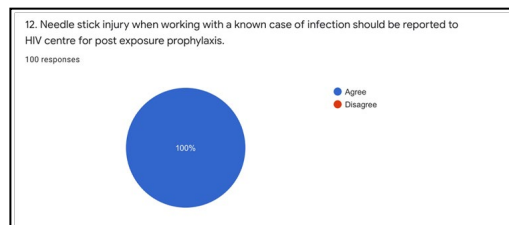
Among the study population, majority (95%) agreed that patients receiving highly active antiretroviral therapy(HAART) predispose to osteopenia and osteoporosis but it does not have impact on implant osseointegration where as 5% of the study population disagreed that patients receiving highly active antiretroviral therapy predispose to osteopenia and osteoporosis.

Figure 11. Patients receiving HAART predispose to osteopenia and osteoporosis.



All of the study population (100%) agreed that needle stick injury occurs when working with a known case of HIV infection should be reported to HIV centre for post exposure prophylaxis.

Figure 12. Needle stick injury when working with a known case of infection should be reported to HIV centre for post exposure prophylaxis.



sional must be kept with utmost concealment and should not be discussed in the presence of any other individual including staff in the clinic. It is best to converse the matters in a closed office or examination rooms and the information be kept in a secure location. Any situation when dentist needs to share the information with consultants and other health care professionals, a written consent should be obtained from the patients. Further, it is important to assure the patients that the information collected would be used only to provide better care without breach in maintenance of confidentiality.

SP is defined as a set of precautionary measures including good hand hygiene practices and use of protective barriers like disposable gloves, mask, eye protection or face shield, and gown during routine patient care carried out by health care workers. SP encompasses precautions in the handling of sharps, blood; all body fluids, secretions and excretions; and avoidance of contamination of nonintact skin and mucous membrane. In prosthodontics, dis-

infection of impression trays, bowls, spatulas, impressions, wax bites, occlusal rims, stone models and prostheses is a crucial aspect of universal precautions for infection control [6-9]. Investigators have reported the prevalence of oral lesions in HIV infected persons to range from 40–70%. It includes bacterial, viral, fungal infections, neoplasms, neurological problems and manifestations due to unknown cause like recurrent aphthous stomatitis, progressive necrotizing ulceration, toxic epidermolysis, delayed wound healing, idiopathic thrombocytopenia and xerostomia [10].

It is well known that prevalence of HIV gingivitis and periodontal disease among HIV infected individuals is high which sometimes gets complicated with necrotizing stomatitis. Though these patients are treated with HAART therapy, the level and extent of periodontal diseases among them remains higher than those negative for HIV infection [11, 12]. The occurrence of xerostomia in HIV individuals is commonly reported in HIV/AIDS patients due to effect of viral infection on salivary glands or as a side effect

of antiretroviral and other medications used. It causes significant morbidity as it is implicated in rapid and widespread dental decay, ulceration of oral mucosa and fungal infections. It also leads to difficulties in speech, mastication, swallowing and discomfort and pain during use of partial or complete dentures. Irritation and ulcerations of the already compromised mucosa are commonly encountered as a consequence of chronic denture movement [13].

Literature reveals that antiretroviral therapy particularly protease inhibitors are associated with temporomandibular joint arthralgia. Florence et al [14]. were the first to report a case of temporomandibular dysfunction associated with the use of indinavir. Osteopenia and osteoporosis are the side effects which is associated with HAART therapy. However, this has no negative impact on implant therapy as suggested by Oliveria et al [15]. The investigators conducted a 6 month follow up study to evaluate clinical and radiographic outcome of endosseous oral implants placement in HIV-positive individuals under Protease inhibitors (PI) and non-PI based HAART. There was no evidence of infection, bone loss or implant mobility and the implant success rate was 100% for both groups.

Conclusion

The results observed in our study showed that awareness and knowledge of implant placement in HIV patients among dental students were high. Various awareness programs should be conducted to educate more about causes, management of periimplantitis, peri implant mucositis, oral lesions associated with HIV and post exposure prophylaxis in case of injury with a known case of HIV infection among dental students.

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