Role of the dentist in the management of patients with HIV/AIDS.

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Abstract

The clinical problem of HIV infection poses one of the greatest challenges to Health Care Workers (HCW) all over the world. AIDS, since its appearance in 1981 has spread to become a major cause of premature death and so far, a cure is yet to be found. Its mode of spread poses special danger to HCW particularly the dentists who have close contact with the patients.

This paper examines the relationship between HIV and dentistry; the role of the dentist, the size of the pandemic and its implication to the dental profession, especially regarding infection control. Ethical issues in the management of HIV patients are also addressed by highlighting areas of conflict.

The aim of this paper is to educate and sensitize the dentist and the dental team to these issues as they relate to occupational exposure and suggest ways of resolving areas of conflict. This is to ensure that neither patient management, the health of the HCW nor their practice is compromised in any way.

Key words: HIV/AIDS, dentist, management

Introduction

June 1981 marked the beginning of the "general awareness" of AIDS in the United States of America (USA), following a report published by the Center for Disease Control and Prevention (CDC). In that report, five men had *pneumocystitis carinii pneumonia* (PCP) without an identifiable cause[1], This came on the heels of an earlier observation in March of the same year of 8 cases of an aggressive form of Kaposi's sarcoma (KS) in young gay men in New York[2]. In June 1983, the causative agent of the disease was identified as a retrovirus simultaneously in USA and France. In America, the virus was named *Human T-Lymphotropic Retrovirus-III* (HTLR-III). The same virus was named *Lymphadenopathy Associated virus* (LAV) by the French[3-6]. In 1985 both viruses were found to be the same and by May 1986 the virus became known as the human immunodeficiency virus[7].

The clinical problem of HIV has imposed greater demands and challenges on Health Care Workers (HCW) worldwide. The reason for this is not far-fetched considering the mode of spread of the Human Immunodeficiency Virus (HIV virus). AIDS, since its appearance in 1981 has spread to become a major cause of premature death, which has since defied a cure. There is therefore the need for HCW and dentists to be conversant with the clinical presentation, oral manifestations, prevention of spread and management of HIV. One of the outstanding features of HIV/AIDS that distinguishes it from other conditions is that infected persons become susceptible to a variety of neoplasms and opportunistic infections, which are rarely seen, in immunocompetent individuals. The causative virus is lymphotropic, attacking the T- helper cells, which are also referred to as the CD4 antigen cells. The virus also causes a reversal of the ratio of T-helper cells to the T- suppressor cells. Destruction of the CD4 cells severely compromises the immune system, which is responsible for the symptomatology of the disease. In addition, antibodies produced in response to the infection are not protective.

The prevalence rate of HIV infection worldwide was put at 39.5 million as at December 2004 with 24.7 million (63%) living in Sub-Saharan Africa. A total of 4.3 million people newly infected with HIV were recorded by December 2006 [8] The global death toll as a result of AIDS was put at 2.9 million in 2006. In Nigeria, the national prevalence rate has increased steadily from 1.9% in 1993 to 5.4% in 2003. About 3.6 million Nigerians are estimated to be living with HIV[8].

HIV and Dentistry

Dental practitioners and allied professions will at some time or the other during their practices come in contact with blood or body fluids such as saliva contaminated with blood. Such fluids may harbour infectious agents such as the highly virulent hepatitis viruses, sexually transmitted disease agents, and the more lethal HIV. HIV is significant to the dental profession for the following reasons:

1. On account of the high prevalence of HIV infection, the likelihood of a dentist treating an infected person is very high.
2. The disease has oral and head and neck manifestations at one stage of the disease or the other[9].
3. The Dentist may be the first health care provider to

diagnose the condition [10].

4. HIV can be spread in the dental clinic if proper infection control practices are not followed.
5. Increased cost of infection control measures will translate to increased cost of treatment.
6. Pressure on existing facilities in providing dental Care of HIV patients is inevitable as the number of infected patients increase.
7. HIV/AIDS pandemic has caused an upsurge in Multi-drug-Resistant TB (MDRTB), and this has implications for dentistry[11]

Preventive measures in management of the HIV/AIDS patient

All patients attending the dental clinic irrespective of their HIV status should be given optimal dental treatment using a consistent infection control protocol to prevent cross infection and infection transmission. The protocol adopted is the "Standard Precaution" outlined by the Center for Disease Control and Prevention (CDC)[12] . This is based on the premise that employers and employees are to treat all body fluids as if they are infectious. It further mandates that HCW must avoid splattering blood or other potentially infectious material on their skin, eyes, hair, mouth, mucous membranes or personal clothing[12]. The practices and procedures for worker protection required by the Occupational and Safety Health Administration (OSHA) can be accomplished by adopting the following methods:

Standard Precautions (SP)

In 1996, CDC [13] expanded the concept of Universal Precautions and changed the term to standard precautions. Standard precautions integrate and expand the elements of universal precautions into a standard of care designed to protect HCW and patients from pathogens that can be spread by blood or any other body fluid, excretion or secretion. The hierarchy of controls that categorizes and prioritizes prevention strategies include the following:

Engineering Controls (Ecs)

These are strategies that eliminate or isolate the hazard of blood-borne pathogens.e.g puncture resistant sharps containers or needle retraction devices. These are the primary strategies for protecting Dental Health Care Personnel (DHCP).

Work Practice Controls (WPCs)

In situations where EC's are not available or appropriate work-practice controls result in safer behaviours (e.g ., one-hand needle re-capping or not using fingers for cheek retraction while using sharp instruments or suturing)

Personal Protective Equipment (PPE) This includes use of protective eye-wear, gloves, and masks that can prevent exposure.

Oral Lesions

Oral lesions in HIV/AIDS have been well documented; such lesions may be the first indication of the underlying immuno-compromised state.

Three groups of oral lesions known to be associated with HIV infection have been documented by the EEC Clearinghouse in 1993 [14]. Group I lesions are lesions strongly associated with HIV infection e.g Pseudomembranous candidosis, Oral hairy leukoplakia and Kaposi's sarcoma. Group II lesions are lesions seen in HIV infection e.g HIV-Salivary Gland Disease (HIV-SGD), herpes zoster etc. Group III lesions are lesions possibly associated with HIV infections e.g Erythema multiforme, fungal and bacterial infections[13]

Oral lesions are significant in HIV/AIDS because they may be the first features or one of the earliest signs of H IV infection. The lesions may serve as a prompt for HIV screening and diagnosis [10]. Oral lesions in HIV may serve as markers for immune deterioration and disease progression and may also indicate poor prognosis [14]. Pain of oral lesions can lead to increased morbidity. In cases like herpes zoster of the trigeminal nerve or facial nerve palsy, facial aesthetics may be compromised. Some of the oral lesions have also been known to have a fatal outcome e.g Kaposis's sarcoma. With a rising prevalence rate of HIV infection, it is most certain that more dentists will be treating sero-positive patients. The dental team, therefore, needs to be more involved in the prevention of spread and care of infected persons. The dentist may possibly be the first health care provider to diagnose the condition from a high index of suspicion and from results of diagnostic investigations prompted by the head/neck and oral manifestations[10]. Dentists should have a good knowledge of oral lesions in HIV /AIDS and be able to recognize and accurately diagnose such lesions early. Early treatment of oral lesions is also necessary to reduce morbidity and mortality in HIV-infected patients. The need to maintain oral health to prevent complications like microbial infections which may be fatal in these patients cannot be over-emphasized.

Appropriate recommendation of pre and post test counseling should form part of the dental management protocol for HIV patients seen in the dental setting. Patients with suspicious lesions attending the dental clinic should be sent for HIV screening test after a pretest counseling. The result obtained from screening, irrespective of the test result, should be followed by a post test counseling. The patient may either be sent for a confirmatory test or referred directly to a physician for further management on account of the underlying disease while the oral health needs of the patient are attended to by the dentist.

Currently, viral load and CD4 status determination are used to modify a patient's treatment. Such diagnostic tests place a greater responsibility on the dental health care delivery team as they need to be aware of drug changes thereby making appropriate management of such patients necessary[15].

Occupational exposure to HIV

Dental treatment involves use of small, sharp instruments with a high risk of inadvertent percutaneous injuries. HIV infection is no doubt a potential threat to HCW in dental practice who have occupational exposure to blood and other body fluids. Though the hazards of blood exposure and needlestick injuries have declined through the adoption of Standard Precautions as outlined by OSHA, it has not been totally eliminated. Certain factors are reported to increase the risk of occupational transmission namely:

- advanced stages of HIV in the patient that constitute the source of the transmitted infection (the source patient)

Hollow bore needle puncture and a poor state of

- health or inexperience of HCW[16].

As at December 2001, CDC had received voluntary reports of 57 documented cases of HIV sero-conversion temporally associated with occupational exposure to HIV among U.S healthcare personnel[17-18]. An additional 138 infections among healthcare personnel were considered possible cases of occupational HIV transmission[19]. No data was available for occupational exposure to HIV in Nigeria.

Fahley et al [16] reported that the likelihood of transmission of HIV-1 from occupational exposure is 0.2% per parenteral exposure (e.g needlestick) to blood from infected patients[19]. The most common mechanism of occupational HIV transmission is percutaneous injury inflicted by a hollow bore needle [20]. The CDC estimated that greater than 380,000 needlestick injuries occur in U.S. hospitals each year; approximately 61% of these injuries were reportedly caused by hollow-bore devices[19]. Each exposure should be regarded as an urgent health issue for the exposed person.

The report also listed ways of managing occupational exposure to HIV in the workplace. While maintaining that there is no direct evidence for the efficacy of immediate actions that an exposed worker should take, they proposed aggressive first aid at the puncture site [16]. This however carries the risk of viral inoculation into the tissues. Copious washing of the site with soap and water has however been proposed to be more beneficial as a first aid measurement than scrubbing[21-22].

Other steps proposed by the authors include immediate reporting to the hospital occupational medical service, which will identify the HBV (Hepatitis B Virus) and HIV status of the source patient, determine the type of exposure, the volume of the innoculum, the timing of the exposure, the extent of injury and the appropriateness of the first aid as well as the psychological status of the HCW. The occupational medical service will also perform HIV serology on the HCW and begin HIV risk counseling. Recommendations regarding ARV prophylaxis and follow-up should also be given[16].

In the Public Health Service Guidelines for the Management of Occupational Exposure to HBV, HCV, and HIV, two main strategies are proposed for managing occupational blood exposure. The first approach is to provide empirical treatment with two or more antiretroviral drugs, unless additional information (e.g the result of an HIV test in a source patient or a detailed description of the exposure) suggests that the treatment was not warranted [17].

The second approach is to conduct a thorough assessment of the exposure (including HIV test in the source patient, if the HIV infection has not already been diagnosed) and then initiate antiretroviral treatment only if the exposure poses a risk of HIV transmission. A single antiretroviral drug or two or more antiretroviral drug in combination may be used. Factors that should be considered in the choice of treatment for an exposed HCW include the risk of HIV infection associated with the exposure, the expected benefit of antiretroviral therapy, the risks associated with the proposed treatment, and the probability that the infecting strains will be susceptible to the antiretroviral regimen used[17].

New roles are evolving for dentists that treat HIV patients. Dentists need to know how to assess the potential for HIV transmission after occupational exposure to blood. They must be able to determine the need for treatment and testing in exposed persons in the dental office environment. Dentists should also be able to make appropriate referrals for immediate post-exposure treatment, follow-up medical care and counseling for the exposed HCW.

Ethical issues

A number of ethical issues arise in relation to HIV/AIDS, the affected patients, the HCW as well as the society. In spite of increased knowledge regarding transmission of the virus some fear and prejudice still exists. Some dentists and physicians still refuse to treat HIV positive patients [23-24]. Refusal to treat HIV positive patients would not only result in unmet treatment needs but could also constitute grounds for charge of serious professional misconduct[25-26]. Patient's confidentiality, stigmatization, HIV testing without patient's consent are also pertinent issues with far reaching implications [27-28]. Stigmatization is seen in areas of job prospects, termination of employment, housing, insurance cover, marriage ,school enrolment and medical care. The negative consequences of stigmatization include denial or refusal to disclose HIV status which would further increase disease transmission, lead to unmet treatment needs and may cause premature deaths [27-28]. Ethical issues of confidentiality also pose a challenge. Patients are entitled to expect that information obtained by the doctor during the course of a medical consultation, investigation or treatment remains confidential and doctors have a duty not to disclose such information to a third party. In countries like Holland and Denmark the right of the patient to confidentiality is absolute irrespective of the circumstance[27-28]. In most parts of the world, the doctor may be permitted to divulge a patient's HIV status in certain cases on a need to know basis; non disclosure may constitute grounds for a lawsuit [27]. Flouting a patient's wishes against disclosure of HIV status to a spouse might put the doctor at risk of being sued for professional misconduct [27-30]. Failure to divulge such information to a threatened spouse may be seen as a case of misdemeanor in countries like Australia[29]. In Zimbabwe, legislation allows the care givers, which include members of the family to be informed about the patient in their care [30] . No legislature currently exists on these issues in Nigeria but in February 2005 , a Bill against Stigmatization of PLWHA (People Living With HIV/AIDS) was passed in Enugu State , south east Nigeria. In many Western countries, the patient's consent is required before HIV testing is carried out [27-28] ;the Zimbabwean Constitution also makes provision for this [26,30] . In Nigeria, a policy was put in place in 2003 to address issues such as confidentiality and stigmatization [31] . Ethical issues in HIV/AIDS are no doubt as complex as they are divergent and these issues need urgent and appropriate resolutions backed by legislature.

Recommendations

The need for a multidisciplinary approach to the management of people with HIV/AIDS cannot be over-emphasized. The primary role of the dentist is in early recognition, diagnosis and treatment of oral lesions in HIV/AIDS. The dynamics of the disease however requires that dentists and allied professions keep abreast of the management of the disease in all its ramifications. The scope of knowledge for the dentist besides the primary

role should include proper infection control practices, the knowledge of complications and oral and systemic side effects of anti-retroviral therapy, and appropriate recommendation for pre and post test counseling. This should form part of the dental management protocol for HIV patients seen in the dental setting.

Where indicated during dental consultation, patients attending the dental clinic should be sent for HIV screening after obtaining patient's informed consent and providing a pretest counseling session. HIV screening is indicated where history, clinical examination and investigation of the patient is suggestive of oral and systemic signs of immuno-suppression. The oral health team should endeavour to guard against any acts of professional misconduct, negligence, as well as acts of misdemeanor while treating HIV/AIDS patients The following recommendations are suggested for optimal management of HIV patient in a dental setting:

a) Regular information dissemination among the oral health care team, through seminars, workshops, and Conferences related to issues of dental awareness, infection control protocols with practical demonstrations where necessary e.g hand-washing technique.
b) Health Care Workers should be encouraged to adopt a positive attitude while treating HIV patients in an attempt to eradicate stigmatization
c) Adequate protection of HCW should be assured during the course of managing HIV/AIDS patients to avoid occupational exposure.
d) Appropriate post exposure prophylaxis protocol should be in place at every dental facility for any exposed healthcare worker at no cost to the HCW. An appropriate protocol would include antiretroviral multi-drug therapy given twice daily for at least a month. This should be commenced within hours not days of the potential exposure.
e) HCW should constitute or form part of lobby groups to prevail on lawmakers to provide and ensure enforcement of legislation on the rights of PLWHA.
f) Integration of Law and Ethics into the training of health care professionals should be considered and Implemented.
The ethics of HIV/AIDS should be taught with periodic review of cases that have resulted in litigation so as to avoid such pitfalls.
g) Services of a legal consultant in clinical practice may be required to provide necessary legal advise on ethical issues on HIV and other controversial health issues in patient management.

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