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Dental-related problems and oral manifestation of HIV/AIDS patients in Soetomo General Hospital Surabaya

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ABSTRACT

Introduction: HIV infection and AIDS have a potential impact on future generations, especially in Indonesia, as a significant contributor to HIV transmission. HIV-infected and AIDS patients are easily contracting possible infections, mainly in the oral cavity, which are decreasing patient's quality of life due to pain, discomfort, and appetite loss. They also subjected to oral health problems, such as dental caries and gingivitis. However, patients with HIV/AIDS tend to neglect their oral health, as they are more concerned with their systemic conditions. This study reports oral manifestations of HIV/AIDS patients and their dental-related problems to assess the need for holistic management.

Methods: Observational studies performed on stadium 4 AIDS patients admitted in the outpatient facility of the Intermediate Care Unit for Infectious Diseases in Soetomo Hospital Surabaya from 2011-2012. Eighty-seven patients participated in this study. Subjects were interviewed regarding previous dental check-ups and examined for oral diseases. Diagnosis of oral lesions and dental problems were made based on clinical appearance.

Results: Many cases of strongly-related lesions were observed, such as oral pseudomembranous candidiasis, atrophic glossitis, chronic hyperplastic candidiasis, oral hairy leukoplakia, linear gingival erythema, and also other less strongly-related lesions such as aphthous stomatitis, exfoliative cheilitis, and angular cheilitis. Dental problems were observed, including dental caries, chronic marginal gingivitis due to calculi deposit, residual roots, and impacted wisdom teeth. During the survey on previous dental check-ups, subjects revealed that most of the patients had never visited a dentist since they diagnosed with HIV (+), and other patients admitted that they choose to conceal their HIV status to the dentist.

Conclusion: Dentists must be well-equipped with comprehensive knowledge of HIV-related manifestations and dental treatment considerations to provide adequate dental and oral health management as a part of the holistic management of HIV/AIDS.

Keywords: HIV/AIDS, oral manifestations, oral health, dental management

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INTRODUCTION

HIV infection and AIDS are the most prominent global challenge of this era. Indonesia positively contributes to the transmission of this morbid infection.[1] HIV and AIDS have every potential impact for the future of this generation as the most type of infection occurs on the age population below 30 years old. HIV-infected and AIDS patients are immunocompromised; risk of contracting other conditions such as oral candidiasis and oral hairy leukoplakia.[2,3]

However, many of them tend to neglect their oral health, as they are more concerned with their systemic conditions.[2,3] They subjected to common oral health problems, such as dental caries, marginal gingivitis due to calculus deposit, necrosis of pulp, and even residual roots due to advanced caries. This problem rise necessary dental check-ups sooner or later. Less do patients acknowledge that a simple inflammatory cytokine stimulation could easily provoke HIV replication against an infected T cell. Having infections in the oral cavity can trigger HIV replication, causing the disease to progress.[4]

In Indonesia, the HIV-infected population is expanding exponentially, and this demands a manageable strategy to cover HIV-infected aspects. Dentistry holds a further significant role than most dentists' awareness. Dental practitioners must be well-equipped in terms of knowledge, skills, and facility, when dealing with patients with underlying infectious diseases, specifically HIV.[5,6]

From those explanations above, this study aims to describe oral manifestations of HIV/AIDS patients in Soetomo General Hospital Surabaya and their dental-related problem in the purpose to assess dentists' awareness and willingness to providing holistic management regarding their oral health status.

METHODS

Observational studies performed a cross-sectional design from the year 2011-2012 in the outpatient facility of the Intermediate Care Unit for Infectious Diseases in Soetomo General Hospital Surabaya. Subjects are stadium 4 AIDS patients that have admitted to this center, with the exclusion of uncooperative patients; a total of eighty-seven patients participated in this study. Subjects were interviewed regarding previous dental check-ups and were examined for oral diseases by two oral medicine specialists—diagnosis of oral lesions and dental problems based on medical records and clinical appearance. The ethical clearance committee has approved the study of Soetomo General Hospital Surabaya (Certificate number: 56/Paske. KKE/IX/2009).

RESULTS

Most of the subjects were men, with a total of 59 subjects, while the remaining women were 28 subjects (Table 1). Clinical oral observational examination are oral pseudomembranous candidiasis (47.13%), atrophic glossitis (22.98%), oral hairy leukoplakia (16.09%), exfoliative cheilitis (14.94%), angular cheilitis (11.49%) and aphthous stomatitis (11.49%) (Table 2).

On the other hand, a clinical dental problem display is a residual root(s) with the highest number about 96.55%, dental caries (79.31%), chronic marginal gingivitis (67.81), necrosis of the pulp (50.57%), and impacted third molar (25,28%) (Table 3).

Table 1 Sex distribution of subjects

Gender	Number (people)	%
Male	59	67.81
Female	28	32.18

Table 2 Clinical oral manifestations observed in the study

Lesion	Number of cases	% of 87 patients
Oral pseudomembranous candidiasis	41	47.13
Atrophic glossitis	20	22.98
Oral hairy leukoplakia	14	16.09
Exfoliative cheilitis	13	14.94
Angular cheilitis	10	11.49
Aphthous stomatitis	10	11.49
Linear gingival erythema	5	5.74
Chronic hyperplastic candidiasis	4	4.59
Necrotizing ulcerative gingivitis	3	3.44
Kaposi's sarcoma	1	1.11

Another analysis for the observation is the medical history of subjects for dental treatment. Most of the cases never visited a dentist all life, about 40.22%, and residents have visited the dentist without announcing the HIV status of approximately 29.88%. Subjects who never consult a dentist since diagnosed HIV about 22.98% and subjects who visited the dentist with reporting the HIV status about 6.8%, as presented in Table 4.

DISCUSSION

HIV-infected and AIDS patients are at risk of suffering oral manifestation of possible infections related to HIV. Most of them pay a lot of focus on this debilitation disease, and they tend to neglect their oral health condition. For instance, this study found a high incidence of residual roots (96.55%). Pakfetrat et al., in their research, who described tooth decay as a common dental-related problem in patients with HIV/AIDS followed by severe periodontitis.[7] Another study conducted by Kumar et al. stated that overall DMFT score was higher in HIV-positive patients in comparison with the HIV-negative group.[8] This finding, supported by similar studies, suggests that they neglected their dental problem for some time until subjects' tooth decayed. Some of the cases aware that they have cavities or calculi, but few are willing to pay a visit to a dentist for various reasons.[9]

None of the survey participants in this study presented a completely healthy mouth. The most common oral mucosal lesion found in this study was oral pseudomembranous candidiasis, atrophic glossitis, and oral hairy leukoplakia with prevalence 47.13%, 22.98%, and 16.09%, respectively. Based on several studies, oral candidiasis reported as the most common lesion associated with AIDS; its prevalence varies according to the number of subjects examined. Almost 90% of HIV-positive patients suffer oral candidiasis.[7,10] Mathur et al., in their study, stated that oral candidiasis found in 40%-75% HIV-positive patients with CD4 <200/mL.[11]

Besides candida infection, oral hairy leukoplakia becomes one of the reliable indicators of low CD4 count in HIV-positive patients, and opportunistic infection from Epstein-Barr Virus (EBV) can occur. This lesion is approximately found in 20% HIV-positive patients and indicate immune deterioration.[11] Another study by Berberi and Aoun found that oral hairy leukoplakia occurs in a lower number, with a prevalence of 16%, similar to our study.[12]

As the immune system becomes weaker, the hematologic disorder often occurs in HIV/AIDS patients. The previous study stated that the prevalence of encounter anemia is approximately 70% in

Table 3 Clinical dental problems observed in the study

Common dental-related Complaints	Number of cases	% of 87 patients
Residual root(s)	84	96.55
Dental caries	69	79.31
Chronic marginal gingivitis	59	67.81
Necrosis of pulp	44	50.57
Impacted third molar	22	25.28

Table 4 Dental treatment experience as owned by subjects

Dental treatment experience	Number of patients	% of 87 patients
Never visited a dentist all life	35	40.22%
Never visited a dentist since diagnosed with HIV	20	22.98%
Visited a dentist announcing HIV (+) status	6	6.8%
Visited a dentist without announcing HIV (+) status	26	29.88%

HIV-positive, and may use for HIV progression.[13] Hidayat et al. reported several encounters anemia in HIV/AIDS patients, including glossitis and angular cheilitis, with prevalence 25% and 2.5%, respectively. Both lesions can be used as a predictor of HIV-positive patient's hematologic conditions so that blood examination could be perform to get appropriate prompt treatment.[14]

Patients had at least one disorder of hard or soft tissue, which undoubtedly caused an inflammatory response from their immune-compromised bodies. Infection stimulates pro-inflammatory cytokines to activate T-cells.[15] In HIV-infected patients, this standard immune defense mechanism turns to be a double-bladed knife. An inflammatory stimulation on HIV-infected T-cells will also activate HIV replication and depletion of CD4+ cells. HIV-infected and AIDS patients are very prone to oral opportunistic infections caused by fungi, bacteria, and viruses.[16] For stadium 4 AIDS patients, contracting possible diseases is a severe matter.[17] Oral lesions open the port of entry for more infections. For example, apparent localized oral candidiasis may easily extend to esophageal candidiasis. If the spore gains access to the bloodstream, candidemia may occur and manifest in other organs such as kidneys and heart valves.[18] Pain and discomfort caused by these oral problems also prevent patients from getting sufficient nutritional intake and decreasing the patients' quality of life. Studies have shown that maintaining a good quality of life is a significant aspect in the management of HIV and AIDS patients.[19]

Many social levels have a poor understanding of diagnosed HIV infection by saying HIV is worse than being convicted of a death sentence.[20] Losing their social credibility and being openly rejected or even denied existence is what they must prepare to face once their HIV status is revealed.[21] Most of those who are aware of oral health care necessity hesitate to visit a dentist and afraid of being denied treatment as their HIV status becomes revealed. This fact drives many of them to hide their HIV status.[22] However, many of them are reluctant to announce their HIV status to any dental practitioners because they are afraid of getting denied treatment by unprepared dentists. This action was chosen based on testimonials from fellow patients who were denied treatment by dentists after having unveiled their status.[23,24] There are still unprepared medical and dental private practitioners who feel intimidated when an HIV-infected patient approach their private practices.[25] Personal dental procedures will put the patients at risk of being denied treatment and increase the risk of spreading infection.[9]

The situation can be adjust by excessive and intensive training on practicing Universal Precautions and obtain grips on what to perform and avoid when offering treatments to patients with infectious diseases. Every single dental practitioner in the world must prepare to deliver medicines to any patient. However, having a referral center where all the high-risk patients jointly receive adequate medical and dental attention would be the most ideal solution. In some public health services, it might be necessary to install an oral health care facility, especially for HIV/AIDS patients. Instead of building a sense of stigma, patients may feel more comfortable undertaking dental treatments in the special care unit than uncomfortably report HIV/AIDS status in other dentists, which could increase the risk of transmitting their disease.[21,26] The aim of the service should not necessarily cover aesthetics, but sufficiently provides essential treatments, such as pain control, simple filling, tooth extraction, scaling-root planning, and oral soft tissue disease management. Any means to control the inflammatory process will help to delay HIV infection's progression.[27]

On a longer-term basis, all dentists must encourage to take training on practicing Universal Precautions and giving dental treatments as well as oral health maintenance to patients with underlying systemic diseases. The reasons why oral lesions need to be appropriately handled for controlling the probability infections, decrease the risk of further infections, relieve pain and discomfort so patients could have an optimum function of their mouths.

These are essential to support the management of AIDS.[23]

Most oral lesions involve oral soft tissue, and most of the cases are not surgical but need pharmacological treatment instead. It means these cases are involved in the area of competence of an Oral Medicine specialist. Several cases involving periodontal issues like gingivitis and periodontitis should be handle with a periodontist. Dental practitioners must have an excellent referral system to ensure the patient receives adequate and comprehensive treatment.

CONCLUSION

This study concludes that dentists must be well-equipped with comprehensive knowledge of HIV-related manifestations and dental treatment considerations to provide adequate dental and oral health management as a part of the holistic management of HIV/AIDS.

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CONFLICT OF INTEREST

The author doesn't have any conflict of interest.

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