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HIV Complications On Ears, Nose, Throat And Skin: Literature Review

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ABSTRACT
Human immunodeficiency virus (HIV) is an agent that can cause infection. HIV/AIDS can cause various complications that affect various parts of the body, including the skin, ears, nose and throat.This research is a Literature Review with a Narrative Review design. The type of data is data published from internationally accredited scientific journals.In total there are 8 studies published in the last 10 years (2012-2022) consisting of 1 prospective study, 5 cross sectional studies, and 2 case report studies. Human Immunodeficiency Virustargets CD4+ T lymphocyte helper cells, causing an extreme form of immune resistance with persistent depletion of CD4+ T lymphocyte helper cells. HIV infection that is left unchecked eventually develops into Acquired Immunodeficiency Syndrome (AIDS). At this stage, the immune system cannot prevent infection, resulting in the death of the individual due to opportunistic infections. Common ear, nose, throat and skin manifestations in HIV positive patients include oral candidiasis, enlarged lymph nodes, rhinosinusitis, allergic rhinitis, enlarged lymph nodes. clear neck, enlarged adenoids, chronic suppurative otitis media, suppurative hidradenitis, lesions on the head and neck, with the most common being rhinosinusitis. Patients with chronic HIV infection without AIDS can experience oropharyngeal candidiasis, recurrent vulvovaginal candidiasis, disseminated cutaneous herpes simplex. Skin manifestations such as seborrhoeic dermatitis, bacillary angiomatosis, varicella-zoster virus reactivation, and molluscum contagiosum infections are common and tend to be severe in HIV patients. The incidence of HIV infection continues to increase, and Indonesia is one of the Southeast Asian countries experiencing a high number of cases. In Indonesia, around 540,000 people live with HIV. The number of new HIV infections increased from approximately 21,511 in 2012 to 41,250 in 2016.

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INTRODUCTION

Human immunodeficiency virus (HIV) is an agent that can cause infection. AIDS is a condition of advanced HIV infection that takes time (10-15 years) to develop. HIV is a chronic disease that can be managed, but not cured. AIDS weakens the immune system and

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makes affected individuals susceptible to a number of conditions, such as kidney and cardiovascular disease, cancer, metabolic bone disease, lipodystrophy, vitamin D deficiency, various opportunistic infections (e.g., viruses, parasites, fungi, and bacterial infections), and malignancy.

HIV/AIDS can cause various complications that affect various parts of the body, including the skin, ears, nose and throat. 2 Clinical prevention of human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS) is the cornerstone of controlling the global HIV pandemic which has now killed more than 40.4 million people worldwide, including 1.5 million children.

HIV belongs to the Retroviridae family in the Lentivirus genus. The virus primarily targets CD4+ T lymphocyte helper cells, causing an extreme form of immune resistance with persistent depletion of CD4+ T lymphocyte helper cells. This weakens the immune system and causes many of the clinical manifestations of the disease. HIV infection that is left unchecked eventually develops into Acquired Immunodeficiency Syndrome (AIDS). At this stage, the immune system cannot prevent infection, resulting in the death of the individual due to opportunistic infections.

UNAIDS and WHO identified 5 key populations most affected by HIV and requiring special care and support to reduce global transmission, namely men who have sex with men (MSM), sex workers, people in prisons and other closed settings, people who inject drugs, and transgender and gender diverse people 5. Without therapy, HIV infection is always fatal. Effective ART with sustained virologic suppression dramatically improves clinical outcomes for people living with HIV. A 2017 meta-analysis estimated life expectancy in high-income countries at 43.3 years after starting ART at age 20 and 32.2 years if ART was started at age 35.

Patients with chronic HIV infection without AIDS may experience oropharyngeal candidiasis,7 recurrent vulvovaginal candidiasis,8 oral hairy leukoplakia, disseminated cutaneous herpes simplex virus,10 and cervical dysplasia or cervical carcinoma in situ.11 Skin manifestations such as seborrheic dermatitis, bacillary angiomatosis, reactivation varicella-zoster virus, and molluscum contagiosum infections are common and tend to be severe in HIV patients. The incidence of HIV infection continues to increase, and Indonesia is one of the Southeast Asian countries experiencing a high number of cases. In Indonesia, around 540,000 people live with HIV. The number of new HIV infections increased from approximately 21,511 in 2012 to 41,250 in 2016. High-risk sexual behavior, often involving sex work or multiple partners, is a significant contributor to HIV transmission, especially through heterosexual relationships. Currently, sexual transmission accounts for 89% of HIV cases in Indonesia. Despite the urgent need to curb the spread of HIV, the current situation in Indonesia is still far from the global commitment known as 95–95-95. More extensive efforts are needed to stop transmission.

METHODS

This type of research uses a Literature Review with a Narrative Review design. The type of data in this research is published data in internationally accredited scientific journals.

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RESULTS

Table 1. Literature Review Research Results

No	Title	Year	Writer	Method	Results
1	*Oropharyngeal candidiasis in HIV/AIDS patients and non-HIV subjects in the Southeast of Iran1*	2018	Abbas Hosain Pour, Samira Salari, Pooya Ghasemi Nejad Almani	*Cross-sectional*	*Candida albicans*is the most common species in HIV/AIDS patients, while Candida Krusei is the dominant species in non-HIV subjects in Kerman, Iran. There was no significant age difference between the two groups. This study emphasizes the importance of considering the prevalence of Candida species in selecting effective candidiasis treatments.
2	*Ear, Nose and Throat Lesions in HIV/AIDS patients in Komfo Anokye Teaching Hospital, Kumasi, Ghana2*	2012	J Opoku-Buabeng, A. Dompreh	*Prospective study*	A total of 67.2% were found to be serial positive. Among the common ENT manifestations include herpes zoster oticus (Ramsay- Hunt syndrome) 33.9, cervical lymphadenoma 21.0%, fungal sinusitis 6.5%, oropharyngeal candidiasis 17.7%
3	*Pott's Puffy Tumor: A New Complications of HIV15*	2014	Saif Ibrahim, Farah Al Saffar, Robert W Regenhardt and Nilmarie Guzma	Case Reports	The patient was a 51-year-old African-American man with a history of head trauma and HIV. The patient presented with symptoms of painful frontal headaches and diplopia. Treatment with empiric antibiotic therapy resulted in significant improvement in symptoms including resolution of diplopia. Surgical intervention via endoscopic sinus surgery was performed to restore frontal sinus drainage, revealing frontal sinus

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No	Title	Year	Writer	Method	Results
					obstruction. Surgical fluid culture revealed coagulase-negative Staphylococcus and Propionibacterium. Both were responsive to piperacillin-tazobactam. The patient was discharged on a 6-week course of piperacillin-tazobactam, which resulted in major improvement and resolution of symptoms. Follow-up laboratories showed a CD4 count of 361 and a viral load of 12,900 copies/ml, leading to a diagnosis of AIDS at that time.
4	*Middle Ear Pathologies in Adults Living With HIV Despite the Use of Antiretroviral Therapy*16	*2022*	*Ben Sebothoma PhD, and Katija Khoza-Shangase, PhD*	*Cross-sectional*	In this cross-sectional design with 132 participants all taking ART including Tenovivir, Lamivudine, Efavirenz, Dolutegravir, and Zidovudine. Findings show that adults living with HIV exhibit middle ear abnormalities even though they are on ART. Of the 132 participants, 18 people suffered from middle ear disorders. The nature and severity of middle ear pathology varied between participants. Otolaryngologists identify various types of middle ear pathology such as otitis media with effusion, tympanic membrane retraction, tympanic membrane scarring, tympanosclerosis, and chronic suppurative otitis media,

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No	Title	Year	Writer	Method	Results
					while tympanometry with a 226Hz probe tone and wideband absorbance measure objectively confirms abnormal middle ear function in this population. However, the findings suggest differences in the sensitivity of measurements used to identify middle ear disease. Tympanometry with a 226Hz probe tone identified fewer cases of middle ear pathology when compared with telepractice clinical examination by an otorhinolaryngologist and wideband absorbance measurements
5	*High Prevalence of Hearing Impairment in HIV-Infected Peruvian Children17*	*2012*	*Christina K. Chao, MD, Josephine A. Czechowicz, MD, Anna H. Messner, MD, Jorge Alarco´n, MD, MPH, Lenka Kolevic Roca, MD, Marsi M. Larraga´n Rodriguez, MD, Ce´sar Gutie´rrez Villafuerte, MD, MPH, Silvia M. Montano, MD, MPH, and Joseph R. Zunt,*	*Cross-sectional*	Fifty-four (38.8%) of 139 children had hearing loss. On multivariate analysis, risk factors included: tympanic membrane perforation (odds ratio [OR] 7.08; 95% confidence interval [CI], 1.65-30.5; P = 0.01), abnormal tympanometry (OR 2, 71; 95% CI, 1.09-6.75; P = 0.03), brain infection (OR 11.6; 95% CI, 1.06-126; P = 0.05), seizures (OR 5 .20; 95% CI, 1.21-22.4; P = 0.03), and CD4 count \500 cells/mm3 (OR 3.53; 95% CI, 1.18-10.5; P = 0.02).

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No	Title	Year	Writer	Method	Results
			MD, MPH		
6	*Prevalence of Ear Nose and Throat (ENT) Manifestations Among HIV Seropositive Patients at a Tertiary Hospital in Northern Tanzania: A Descriptive Cross-Sectional Study18*	*2020*	*Peter Stephen Shija, Joshua Alexander Karaba, Rune Nathaniel Philemon, Bernard Lucas Minja, Philbert Patrick Mtenga, Denis Robert Katundu*	*Cross-sectional*	Sixty-eight (34%) of 200 HIV-infected patients had ENT manifestations. The most The age group affected is 0–9 years. ENT manifestations are more common in women (23.5%) compared to men (10.5%). Those with a CD4 count of less than 200 cells/μL are also included in category a high prevalence (56.3%).
7	*Head and neck lesions among HIV/AIDS patients on highly active antiretroviral therapy attending the Muhimbili National Hospital in Dar es Salaam, Tanzania19*	*2019*	*Athanase Masele, Karpal Singh Sohal, Boniphace M Kalyanyama, Sira Stanslaus Owibingire, Elison NMSimon*	*Cross-sectional*	Of the total number of patients included in this study, 55 (15.9%) had head and neck lesions. There is there were more women (78.2%) with a male to female ratio of 1:3.6. The mean age of patients was 38.27 ± 1.74 years. Approximately 36.4% (n=20) of patients with head and neck lesions were diagnosed with HIV/AIDS within 2 years. The majority had CD4 counts ≤200 cells/μL. Oral candidiasis, squamous cell carcinoma of the head and neck (HNSCC), Kaposi's sarcoma (SK) and non-Hodgkin's lymphoma (LNH) are common lesions found.
8	*Case report of hidradenitis*	*2021*	*Brian D Rankin and Richard M*	*Case reports*	Case reports of sufferers of hidradenitis suppurativa

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No	Title	Year	Writer	Method	Results
	suppurativa localized to the face in an HIV patient20		*haber*		appearing exclusively on the face, as well as reports of sufferers of HIV and hidradenitis suppurativa, are rare. Here, we present the case of an HIV positive man suffering from hidradenitis suppurativa localized only to his face. We also reviewed facial hidradenitis suppurativa and hidradenitis suppurativa in HIV patients.

Discussion

Based on the results of a literature search regarding HIV complications for the skin, ears, nose and throat, in research conducted by Abbas Hosain Pour, Samira Salari and Pooya Ghasemi Nejad Almani in Oropharyngeal candidiasis in HIV/AIDS patients and non-HIV subjects in the Southeast of Iran , Oropharyngeal candidiasis in HIV positive patients can manifest in a variety of ways including pseudomembranous candidiasis, erythematous candidiasis, angular cheilitis, linear gingival erythema, ulceration, oral hairy leukoplakia, and swollen salivary glands. CD4 T lymphocyte count drops to 350 CFU/mL causing oropharyngeal candidiasis in HIV patients, thrush can spread to the esophagus, causing esophageal candidiasis. HIV/AIDS weakens the immune system, making individuals more susceptible to opportunistic infections such as oropharyngeal candidiasis, which can further worsen health and quality of life. In HIV/AIDS patients, oropharyngeal complications can include in addition to oral symptoms, but also systemic effects, which can affect the patient's overall health and potentially reduce life expectancy. The presence of Candida species, especially Candida albicans, in the mouth, pharynx and larynx of HIV patients /AIDS can contribute to the development of candidiasis and complications.

J Opoku-Buabeng, A. Dompreh in Ear, Nose and Throat Lesions in HIV/AIDS patients in Komfo Anokye Teaching Hospital, Kumasi, Ghana, HIV/AIDS can cause various complications that affect various parts of the body, including the ear, nose, and Throat (ENT) Common complications associated with HIV/AIDS include Herpes zoster oticus (Ramsay-Hunt syndrome), cervical lymphadenopathy, fungal sinusitis, and oropharyngeal candidiasis. Although rare, invasive aspergillosis has been reported as a complication of AIDS affecting areas such as the sinuses. HIV/AIDS can cause a high prevalence of head and neck lesions, with manifestations such as recurrent epistaxis, aphthous stomatitis, chronic rhinosinusitis, chronic suppurative otitis media, and enlarged parotid glands.

In the journal Pott's *Puffy Tumor: A New Complications of HIV*writing by Saif Ibrahim, Farah Al Saffar, Robert W Regenhardt and Nilmarie Guzma, HIV infection can cause various complications, one of which is Pott's Puffy Tumor (PPT), as highlighted in the journal. Pott's

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Puffy Tumor is a rare complication of HIV involving frontal bone osteomyelitis and subperiosteal abscess complicated by frontal sinusitis. Individuals with HIV are at higher risk of opportunistic infections due to their weakened immune systems. In the case presented in the journal, the patient had an immune disorder secondary to HIV infection, which predisposed him to frontal sinusitis. HIV patients may experience a variety of infections, including sinusitis and soft tissue infections caused by certain bacterial isolates. Patients in this study had bacterial isolates consistent with those that cause sinusitis and soft tissue infections in HIV patients. The potential for complications such as Pott's Puffy Tumor in HIV patients can occur due to various factors, such as the presence of other predisposing conditions such as head trauma, as seen in case studies. This delayed presentation can complicate the management and treatment of the condition.

Research conducted by Ben Sebothoma PhD, and Katija Khoza-Shangase, PhD in Middle Ear Pathologies in Adults Living With HIV Despite the Use of Antiretroviral Therapy shows that individuals living with HIV can experience middle ear disease, even when undergoing antiretroviral therapy (ART). . These diseases include otitis media with effusion, retracted tympanic membrane, tympanic membrane scarring, tympanosclerosis, and chronic suppurative otitis media. A weakened immune system in HIV patients can allow pathogens to enter the middle ear system, leading to these complications. Although antiretroviral therapy has significantly improved the quality of life for individuals with HIV, there is still persistent middle ear disease in this population. This requires further research to explore the onset and progression of this disease to effectively implement prevention strategies, especially in low- and middle-income countries that face challenges in ear and hearing care services.

In the journal High Prevalence of Hearing Impairment in HIV-Infected Peruvian Children. This study identified a high prevalence of hearing impairment in HIV-infected Peruvian children, with 38.8% of participants affected. Risk factors for hearing impairment include abnormal tympanometry, tympanic membrane (MT) perforation, and low CD4 cell count. , indicating middle ear disease as a significant contributor to hearing loss. Middle ear pathology in HIV-infected children, such as recurrent otitis media and chronic tympanic membrane perforation, can cause conductive hearing loss. The association between low CD4 cell counts and hearing loss suggests that cumulative damage to the tympanic membrane and middle ear caused by recurrent ear infections may contribute to hearing loss. The study findings emphasize the importance of early detection and intervention for hearing loss in HIV-infected children to reduce long-term developmental consequences.

Cross sectional Study in the Prevalence of Ear Nose and Throat (ENT) Manifestations Among HIV Seropositive Patients at a Tertiary Hospital in Northern Tanzania: A Descriptive Cross-Sectional. Research conducted on 200 HIV positive patients, common ear, nose and throat manifestations in HIV positive patients include oral candidiasis, enlarged lymph nodes, rhinosinusitis, allergic rhinitis, enlarged cervical lymph nodes, enlarged adenoids, and chronic suppurative otitis media with most common in rhinosinusitis. These complications highlight the importance of early identification, monitoring, and appropriate intervention in HIV-infected individuals to manage and prevent the development of ear, nose, and throat

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manifestations associated with the disease.

In a study entitled Head and neck lesions among HIV/AIDS patients on highly active antiretroviral therapy attending the Muhimbili National Hospital in Dar es Salaam, Tanzania in 2019, HIV targets the CD4 T lymphocyte population, which causes damage to the immune system and susceptibility to various diseases. such as opportunistic infections, neurological disorders, and malignant head and neck lesions are common manifestations of HIV/AIDS, involving the skin and upper gastrointestinal tract. these lesions can indicate HIV infection, predict disease progression to AIDS, and have been reduced globally with the introduction of highly active antiretroviral therapy (HAART). Common head and neck lesions among HIV/AIDS patients include oral candidiasis, head and neck squamous cell carcinoma, Kaposi's sarcoma, and non-Hodgkin's lymphoma. Most patients with head and neck lesions have CD4 levels below 200 cells/μL. In this study, the majority of patients with head and neck lesions had been diagnosed with HIV/AIDS for more than 2 years, and a significant association was found between the occurrence of head and neck lesions and patient age, duration since HIV/AIDS diagnosis, and patient CD4 count.

In this Case Report Case report of hidradenitis suppurativa localized to the face in an HIV patient concerns a 31-year-old HIV-positive man with suppurative hidradenitis (HS) localized to his face, indicating a rare occurrence of suppurative hidradenitis in an HIV patient Individuals with HIV may experience a variety of conditions skin conditions such as suppurative hidradenitis, which can be difficult and recurrent. The patient in this case experienced suppurative hidradenitis even though his HIV was well controlled with once-daily oral medication. demonstrating the complexity of managing HIV-related complications. HIV patients with suppurative hidradenitis may face challenges in disease progression and quality of life, emphasizing the importance of early recognition and initiation of treatment. Reports indicate that individuals with HIV are more likely to have a concurrent diagnosis of suppurative hidradenitis compared with those without HIV, highlighting the increased risk of certain skin conditions in immunocompromised individuals.

CONCLUSION

Based on the results of identification and research in this literature review, Human Immunodeficiency Virus (HIV) is an agent that can cause infection. AIDS is a condition of advanced HIV infection that takes time (10-15 years) to develop. The virus primarily targets CD4+ T lymphocyte helper cells, causing an extreme form of immune resistance with persistent depletion of CD4+ T lymphocyte helper cells. This weakens the immune system and causes many of the clinical manifestations of the disease. HIV infection that is left untreated eventually develops into Acquired Immunodeficiency Syndrome (AIDS). At this stage, the immune system cannot prevent infection, resulting in individual death due to opportunistic infections. Common ear, nose, throat and skin manifestations in HIV positive patients include oral candidiasis, enlarged lymph nodes, rhinosinusitis, allergic rhinitis, enlarged lymph nodes. clear neck, enlarged adenoids, chronic suppurative otitis media, suppurative hidradenitis, lesions on the head and neck, with the most common being

rhinosinusitis. These complications highlight the importance of early identification, monitoring, and appropriate intervention in HIV-infected individuals.

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