

# Clinical features of HIV and its associated problems

Literature review article

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## **Abstract:**

This study of systemic review article was done to identify clinical features of HIV patients and other associated problems like oral problems, neurological problems, problems of lungs; like lung infection, lung cancer, tuberculosis, etc. this study also focuses on effect of religion and spirituality on HIV infected people's lives. Last thing which is discussed in this review article is effects and problems of COVID-19 on HIV infected patients. For this study "PubMed" and "Google Scholar" was used and 15 articles were shortlisted for study. It was identified that many patients do not show symptoms in early stage of HIV and signs and symptoms which are normally observed are fatigue, loss of appetite, fever, oral infections, tuberculosis, hepatitis B and C, deep neck infections, psychiatric illness, liver damage. Another thing identified is that condition and mortality rate of people infected with HIV worsen when they come in contact with COVID-19. Early diagnosis of HIV should be done, especially in children, in order to prevent severe and fatal symptoms to become visible.

**keywords : HIV, clinical features, oral problems, Neurological manifestations, COVID-19**

## **Introduction**

According to World Health Organization data from December 2015, there are 36.7 million (34.0–39.8 million) individuals living with human immunodeficiency virus (HIV) worldwide.<sup>1</sup> First cases of AIDS were reported in the mid-1980s and its heterosexual transmission has grown over time, affecting a large number of women of childbearing age and capable of transmitting HIV virus to their children.<sup>4</sup>

Most of the cases (55%) are diagnosed due to the detection of anti-HIV-positive individuals without clinical symptoms and remaining , which are diagnosed , complain of: fever , loss of appetite, fatigue and malaise. .<sup>1</sup> Early identification of oral manifestations, which usually are the first signs of this infection or its progression in children , may assist in choosing appropriate therapy and reducing its morbidity.<sup>4</sup> A wide variety of oral lesions in HIV-infected pediatric patients are reported in the literature, such as: candidiasis, gingivitis, oral hairy leukoplakia, Kaposi's sarcoma, parotid enlargement, herpes simplex.<sup>4</sup>

Many neck infections usually originate from infections of the upper aerodigestive tract, which then spread along the spaces and fascial planes of the neck. Many complications are then observed, which include upper airway obstruction, sepsis, mediastinitis, thrombosis of the jugular vein, and rupture of the carotid artery, are potentially life-threatening.<sup>3</sup>

(1)

## Methods

This literature review consisted of a bibliographic survey in PubMed and google scholar. Adopting "advanced search" mode, the following keywords were used : "clinical features", "HIV", "oral problems", "Neurological manifestations", "COVID-19", in English. Inclusion criteria for the articles were: descriptive, cross-sectional, and comparison studies reporting clinical features of HIV-infected people, published in English between 2016 and 2020. After the initial selection, repeated articles were excluded from the sample, along with those which did not include at least two keywords in the title or abstract, were not published in full and did not present the investigated issue as main subject. Last selection step consisted of reading the texts in full, followed by the construction of tables using most relevant information of each selected article. Endnote software was used to manage the files .

## Results

A total of 266 articles were identified in the databases searched. After excluding duplicate articles and those that did not meet predetermined inclusion and exclusion criteria, there were 20 articles left for full reading. After analyzing the content of each one of them, 15 scientific articles that addressed investigated issues were selected for this review.

Author/year	Purpose	Results	Conclusions
Ozdemir, B. Yetkin, M. A. Bastug, A. But, A. Aslaner, H. Akinci, E. Bodur, H.  2018	To evaluate the characteristics of the clinical, laboratory findings and epidemiological features of HIV/AIDS patients to obtain useful data on the epidemic type associated with Turkey.	Most of the cases (55%) were diagnosed due to the detection of anti-HIV-positive individuals without clinical symptoms. Some patients(44%) were admitted with complaints including fever (15.4%), malaise (12.5%), fatigue and loss of appetite	Early diagnosis of HIV infection can have a direct impact on prognosis and survival. Therefore, screening laboratory investigations should be extended, particularly in high-risk groups.
Amorim, L. T. Schlemper Junior, B. R. 2019	To evaluated the clinical features, epidemiology, opportunistic infections and coinfections of HIV/AIDS patients in small cities.	3.5% had hepatitis C, 2.1% hepatitis B, 4.2% syphilis, and 4.9% tuberculosis; 38.5% had opportunistic infections. candidiasis, pneumonia, herpes, and toxoplasmosis are most prevalent. herpes zoster, moniliasis (oral and esophageal), pneumonia, diarrhea, and cerebral toxoplasmosis were present in 38.5%.	HIV infection follows the national trend, but hepatitis B and C coinfection rates were higher, while tuberculosis rate was lower.
Sittitrai, P. Srivanitchapoom, C. Reunmakkaew, D. 2018	To compare deep neck infection in patients with and without human immune deficiency virus	In the HIV group, Ludwig's angina was common ,and was the main cause of air way obstruction. <i>Streptococcus pneumoniae</i> , <i>Staphylococcus aureus</i> , and <i>Pseudomonas aeruginosa</i> were most often isolated in the HIV group. These patients had higher risk of complications like sepsis, mediastinitis, jugular vein thrombosis, and pneumonia	Dental healthcare, appropriate empirical antibiotics, early detection ,and management of the airway and complications, may improve outcomes.
Araújo, J. F. Oliveira, A. E. F. Carvalho, Hlcc Roma, Frvo Lopes, F. F. 2018	To identify the main oral lesions affecting pediatric patients with HIV	The most frequent injuries were oral candidiasis, gingivitis, parotid gland enlargement and linear gingival erythema ,.oral hairy leukoplakia, Kaposi's sarcoma, herpes simplex.	The most frequent oral manifestation in HIV-infected children is oral candidiasis, followed by changes such as gingivitis and enlargement parotid glands.
Sacktor, N. 2018	To evaluate neurocognitive disorders and problems of HIV patients with HIV-associated neurocognitive	In CART-treated patients, the prevalence of HIV-associated dementia has declined substantially. HIV+ patients with mild neurocognitive disorder can still have significant functional impairment activities of daily	HAND remains a common neurological condition globally , necessitating the need for new animal models to examine pathogenesis and

	disorder (HAND) after combination antiretroviral therapy (CART)	living. As the HIV+ patient population ages, cerebrovascular disease risk factors such as hypertension, diabetes, and hypercholesterolemia are increasingly recognized	potential treatments for HAND.
Chen, Hai Lin, Fangju Liu, Shimeng Da, Yuwei Guo, Dongmei 2017	To presented detailed information regarding Neurological manifestations, laboratory and neuroimaging features in HIV-infected patients making an effort to improve the recognition of neurological complications of HIV infection	The observed neurological disorders were motor/sensory deficits in the limbs (75%), cognitive impairments (42%) and fever (33%). Non-specific results of laboratory tests, were elevated erythrocyte sedimentation rate (ESR), cerebrospinal fluid (CSF) protein concentration and IgG, were found.	The clinical scenarios of HIV-infected patients are remarkably diverse and complex. Prospective studies with follow-up were needed to bring more accurate information.
Bajema, Kristina L Bassett, Ingrid V Coleman, Sharon M Ross, Douglas Freedberg, Kenneth A Wald, Anna Drain, Paul K 2019	To describe the prevalence, clinical characteristics, and risk of mortality for HIV-infected adults with subclinical tuberculosis	Among 654 participants, 96 were diagnosed with active tuberculosis disease and 28 with subclinical disease. The median CD4 count was 68 cells/mm <sup>3</sup> in patients with active tuberculosis, 136 cells/mm <sup>3</sup> in patients with subclinical disease. Persons with subclinical TB will be missed by screening for TB, which is recommended by WHO for TB.	Nearly one-quarter of tuberculosis cases among HIV-infected adults were subclinical, which was characterized by an intermediate degree of immunosuppression. Early identification of subclinical TB in patients with HIV, is critical.
Amimo, F. Lambert, B. Magit, A. 2020	To examine the potential implications of COVID-19 on the control of these major epidemic diseases, like HIV, TB in Africa.	There is a similarity of clinical features of TB and COVID-19 .patients with clinical features like those of COVID-19 are hesitant to voluntarily seek care in a formal health facility. With the current measures to control COVID-19, lower class people can not get access to healthcare. including antiretroviral and prophylactic drugs for people living with HIV and Acquired Immune Deficiency Syndrome, anti-tuberculosis drugs, etc.	COVID-19 responses at country level should include measures to protect vulnerable and under-served segments of society.

Jallow, A. Ljunggren, G. Wändell, P. Wahlström, L. Carlsson, A. C. 2017	To explore the prevalence of HIV and its association with psychiatric co-morbidities.	In females and males with HIV-diagnosis respectively, drug dependence disorder was 7.5 and 5.1, psychotic disorders were 6.3 and 2.9 , bipolar disorder was 2.5 and 3 , depression diagnosis was 1.5 and 3.4 , trauma-related disorder was 1.5 and 2.9 , anxiety disorder was 1.2 and 2.2.	Despite effective anti retroviral therapy, people living with HIV have an impaired psychiatric health and a history of drug abuse in comparison to the general population.
Heron, S. E. Elahi, S. 2017	To discuss oral manifestations associated with HIV infection and how HIV infection and ART influence the oral microbiome	Oral mucosal infections, such as oropharyngeal candidiasis or hairy leukoplakia, are commonly seen in HIV-infected individuals suggesting compromised oral mucosal immunity due to HIV infection. increase in the rate of human papillomavirus (HPV) infection, known as oral warts, has been reported with the onset of ART.	The role of oral microbiota in HIV-infected individuals requires further attention as either the disease (HIV) or the treatment (ART) may impact diversity and composition of the oral microbiome. The host's immune response at the mucosal surfaces is a key determinant for HIV acquisition and spread.
Doolittle, B. R. Justice, A. C. Fiellin, D. A. 2018	Systematic review to be done to evaluate the association between religion, spirituality and clinical outcomes in HIV infected individuals.	Out of 15 ,ten studies reported a positive association between religion or spirituality and a clinical HIV outcome. Two studies failed to detect such an association; and two demonstrated a negative association. One study identified features of religiosity and spirituality that had both negative and positive associations with HIV clinical outcomes.	Further longitudinal studies and interventions might be required to further clarify the potential impact of religion and spirituality on HIV clinical outcomes.
Chiappini, E. Bianconi, M. Dalzini, A. Petrara, M. R. Galli, L. Giaquinto, C. De Rossi, A. 2018	Narrative research to be done to collect data regarding accelerated aging process in HIV-infected children.	Increased levels of pathogen-associated molecular patterns (PAMPS), increased mitochondrial damage, higher levels of pro-inflammatory cytokines, acceleration of age-associated methylation pattern and other epigenetic modifications are documented in HIV infected children.	Aging processes in children with HIV infection impact their quality and length of life. Further studies regarding the mechanisms involved in premature aging are needed to search for potential targets of treatment.

Suwanwongse, K. Shabarek, N. 2020	To find data regarding clinical features, disease courses and outcomes of COVID-19 in patients with HIV infection.	Very high mortality rate at 78% was observed, which may contradict to the hypothesis that immunosuppression from HIV infection prevents against severe COVID-19.	More research is needed to determine the impact of HIV on the clinical course of COVID-19.
Ganesan, M. Poluektova, L. Y. Kharbanda, K. K. Osna, N. A. 2018	To evaluate the incidence of HIV, clinical evidence of HIV related liver damage, interactions between HIV and liver cells.	HIV induces liver injury by direct interactions with parenchymal and non-parenchymal. Multiple mechanisms can be attributed to the role of HIV in promoting liver inflammation and fibrosis liver cells.	Proper management of HIV-infected patients requires recognition of liver injury conditions for effective targeted diagnosis and treatment.
Castro-Lima, V. A. C. Borges, I. C. Joelsons, D. Sales, V. V. T. Guimaraes, T. Ho, Y. L. Costa, S. F. Moura, M. L. N. 2019	To evaluate 30-day mortality in human immunodeficiency virus (HIV) and non-HIV patients who acquired a healthcare-associated infection (HAI) and to describe the epidemiological and microbiological features of HAI in a population with HIV	HIV patients were younger and had more respiratory distress than non-HIV patients. Ventilator associated pneumonia (VAP) was more frequent in the HIV group compared with the non-HIV group, with a predominance of Gram-negative organisms. A high 30-day mortality was observed and there was no difference between groups (HIV, 52.0% vs non-HIV)	HIV infection is not a predictive factor that is associated with 30-day mortality of patients with HAI, and age was the only independent factor associated with outcome.
Frega, S. Ferro, A. Bonanno, L. Guarneri, V. Conte, P. Pasello, G. 2020	To identify peculiar predictive and/or prognostic features of tumor in HIV infected patients and their response and tolerability to oncologic treatments.	HIV infected seem to be younger when diagnosed with LC, in comparison with HIV-negative people. standardized incidence ratios (SIRs) for LC resulted more than 2.5 higher in PLWH in comparison to the general population,	HIV infected have a significantly higher all-cause mortality, further investigations are needed to understand the reasons of this phenomena, and how HIV worsen mortality in people with cancer and other comorbidities

## Discussion

Cross-sectional and prospective studies of articles have shown that there are small geographic variations, but in general, the most common infections affect the respiratory tract, the gastrointestinal tract, and the nervous system.<sup>2</sup>

Secondly, immunosuppressed patients are more susceptible to opportunistic infections and this problem becomes worse when it comes to HIV-positive pediatric patients because they present an immature immune system that makes them more prone to severe immunosuppression and rapid disease progression<sup>4, (2)</sup>

Many oral infections are documented during HIV infection, that's why HIV infection could be considered a mucosal disease<sup>10</sup>. Testing for HIV infection in people with oral infections, can lead to early and more number of people with HIV-infected diagnosed.

Due to accelerated aging, HIV-infected children and adolescents should be carefully monitored for the prompt detection and early treatment of noninfectious disorders related to premature aging. Notably, lipid and bone metabolism, cancers, cardiovascular, renal, and neurological systems must be carefully monitored adopting screening programs and preventive measures in high risk populations, this will prevent early death and worse HIV infected children cases.<sup>12</sup>

Lastly, similarity between clinical features of TB and COVID-19 is observed, and therefore, patients with clinical features like those of COVID-19 are hesitant to voluntarily seek care in a formal health facility, this will lead to increase in number of cases of both. due to lockdown for COVID-19, many lower class AIDS patients can neither get access to healthcare facilities nor earn enough money.<sup>8</sup> so government should help them financially and reduce restriction, in order to avail healthcare facilities.

## Conclusion

The findings of this study suggest that Most of the Clinical features of HIV are same all around the world but little changes are be observed in different geographical locations. Early diagnosis is required in order to control the worsening of cases. Some clinical features like subclinical TB in patients with HIV, is critical to identify in early stages, so new identification methods should be explored. government should release some restriction in COVID-19, in order to make healthcare facilities accessible for HIV infected patients who have COVID-19 positive results.

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