

# Skin Diseases and Sexually Transmitted Infections among Patients with HIV infection/AIDS referred at the City Institute for Skin and Venereal Diseases in Belgrade: a Case Series of 38 Patients

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## Abstract

Human immunodeficiency virus (HIV) infection may be associated with a wide spectrum of dermatological disorders. This study reports the prevalence of dermatologic diseases and sexually transmitted infections among 38 HIV-infected adults who consecutively sought treatment at the City Institute for Skin and Venereal Diseases in Belgrade. Patients were referred by their primary HIV providers between January 2011 and June 2012. More than 80% of patients were men who have sex with men. The most prevalent diseases were anogenital warts (36.8%) and syphilis (34.2%), followed by folliculitis and dermatophyte infections (7.9% each). Thirty-four patients (89.5%) were on highly active antiretroviral therapy (HAART) before the first visit to the dermatologist. Although, the pattern of skin disorders was consistent with literature data, high prevalence of sexually transmitted infections among our patients was rather peculiar. These facts point to the need for education of sexually active persons with HIV about the consequences of sexually transmitted infections, risks of transmission of drug resistant HIV strains, as well as safe sex practice and consistent condom use.

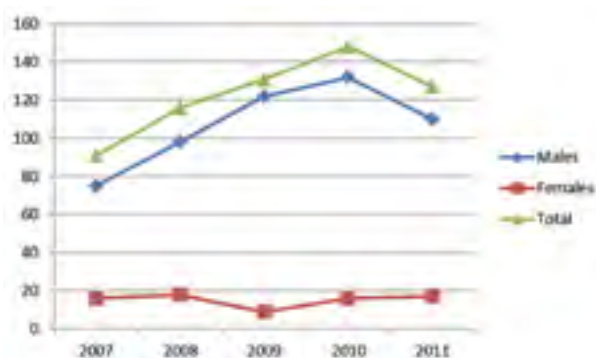
## Key words

HIV; Skin Diseases; Sexually Transmitted Diseases; Risk Factors; Acquired Immunodeficiency Syndrome

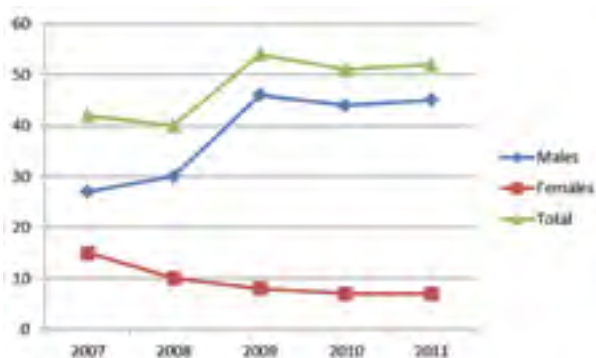
Disorders of the skin occur throughout the course of HIV infection affecting more than 90% of HIV-infected patients at some time (1, 2). Even before the causative agent was identified, skin involvement in AIDS (eng. acquired immunodeficiency syndrome) has been appreciated in: establishing criteria for diagnosis and staging, as well as prognostic significance of some complications. As the infection progresses and diseases develop, the number of patients with mucocutaneous complications as well as the number of manifestations in any one patient increases (3). Dermatological manifestations in HIV patients are often more atypical than in HIV-negative patients (4). Not only the incidence, but also the severity of common dermatoses, for example, seborrhoeic dermatitis, herpes simplex, mollusca contagiosum, is increased correlating in many cases with the absolute numbers of CD4+ T cells (3, 5).

The administration of highly active antiretroviral therapy (HAART) has been highly beneficial to patients with HIV-associated skin diseases, but on the other side, in many instances the skin has been affected by side effects of these drugs and manifestations of the immune reconstitution inflammatory syndrome/immune reconstitution disease (IRIS/IRD). Thus, HAART has altered clinical presentations of many skin diseases (6). Moreover, since the introduction of HAART, sexually transmitted infections have been increasing among HIV-infected homosexual men (7, 8).

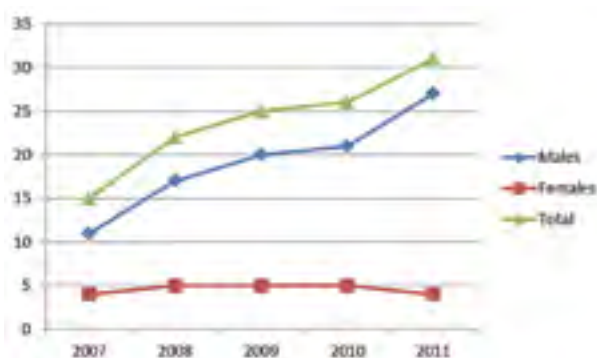
According to the available data and routine surveillance, HIV infection in the Republic of Serbia has been well controlled. In the period of 2010 - 2011, there were 275 newly diagnosed HIV cases, 103 AIDS cases and 57 AIDS-related deaths reported to the Institute of Public Health of Serbia (Figures 1, 2, 3) (9).



**Figure 1.** Number of newly diagnosed HIV cases, 2007 - 2011



**Figure 2.** Number of AIDS cases, 2007 - 2011



**Figure 3.** Number of AIDS-related deaths, 2007 - 2011

The purpose of this study was to investigate dermatologic diseases and sexually transmitted infections (STIs) among HIV-infected adults who sought treatment at the City Institute for Skin and Venereal Diseases in Belgrade.

### Patients and Methods

The study included all patients referred to the City Institute for Skin and Venereal Diseases in Belgrade, by primary HIV providers, in the period between January 2011 and June 2012. One dermatologist examined and interviewed all HIV-infected patients. All diagnoses were based on patients' history and

Table 1. Demographic characteristics of 38 HIV-infected patients treated at the City Institute for Skin and Venereal Diseases in Belgrade

Patients	N	(%)
Age (years)		
21-30	9	23.7
31-40	19	50.0
41-50	4	10.5
51-60	6	15.8
Gender		
Male	34	89.5
Female	3	7.9
Transgender	1	2.6

N - number of patients

physical examination and confirmed by laboratory tests if necessary. Data on basic demographic characteristics, as well as laboratory and other clinical results were retrospectively collected from patients' records. Unfortunately, data on CD4 + T cell counts were not available.

## Results

From January 2011 to June 2012, a total of 38 HIV-infected cases were referred to the City Institute for Skin and Venereal Diseases in Belgrade. Of 38 patients, there were 34 (89.5%) males, 3 (7.9%) females and one patient was transgender. Their average age was 37 years (range 22 - 59) (Table 1). Regarding sexual orientation, 31 (81.6%) patients were homosexual, two were bisexual and 5 were heterosexual (Table 2). Thirty-four patients (89.5%) were on HAART before the first visit to the dermatologist (Table 3).

All skin and venereal diseases diagnosed in our patients were ranked by prevalence (Table 4). The most prevalent diseases were anogenital warts (36.8%) and syphilis (34.2%). The next most common conditions were folliculitis (10.5%), common warts and dermatophyte infections (7.9%, each). The prevalence of molluscum contagiosum, seborrheic dermatitis, genital herpes, epidermoid cysts, gonorrhea and herpes zoster were 5.2%, each.

## Discussion

Diseases of the skin and mucous membranes were among the first recognized clinical manifestations of AIDS. Mollusca contagiosum, oral hairy leukoplakia, oral candidiasis, chronic ulcerating herpes simplex and Kaposi's sarcoma are strongly associated with advanced immunodeficiency (2). Effects that HIV infection may have on some skin conditions, for

Table 2. Sexual orientation of 38 HIV-infected patients treated at the City Institute for Skin and Venereal Diseases in Belgrade

Patients	N	(%)
Homosexual	31	81.6
Bisexual	2	5.2
Heterosexual	5	13.2

N - number of patients

Table 3. Number of dermatovenereologic diagnoses per patient among 38 HIV-infected patients treated at the City Institute for Skin and Venereal Diseases in Belgrade

Patients	N	(%)
Initiated HAART	34	89.5
Number of diagnoses		
one	27	71.0
two	5	13.2
three	6	15.8

N - number of patients; HAART - highly active retroviral therapy

Table 4. The prevalence of dermatovenereologic diseases in 38 HIV-infected patients

Diseases	N	Prevalence (%)
Anogenital warts	14	36.8
Syphilis	13	34.2
Folliculitis	4	10.5
Common warts	3	7.9
Dermatophyte infections	3	7.9
Molluscum contagiosum	2	5.2
Seborrhoeic dermatitis	2	5.2
Genital Herpes	2	5.2
Epidermoid cyst	2	5.2
Gonorrhea	2	5.2
Herpes zoster	2	5.2
Erythrasma	1	2.6
Onychomycosis	1	2.6
Pityriasis versicolor	1	2.6
Alopecia areata	1	2.6
Androgenetic alopecia	1	2.6

N - number of patients

example, psoriasis and leprosy, are less clarified. Over the past decade, HAART has dramatically altered the natural history of HIV infection, induced immune recovery, and decreased cutaneous manifestations of HIV infection (6, 10, 11).

The majority of our patients have sought treatment for suspected STIs. The most prevalent were anogenital warts and syphilis, but gonorrhea and genital herpes were diagnosed as well. In this study more than 80% of patients were men who have sex with men (MSM). Moreover, in regard to HIV

transmission among newly diagnosed HIV infected persons registered in Serbia in the period from 2002 - 2010, there was a clear increasing trend among MSM: 57% of all reported HIV cases in 2010 versus 26% in 2002 (9). Recent studies have shown an increase in sexually transmitted infections among HIV-positive homosexual men (7, 12). In an outbreak of early syphilis registered at the City Institute for Skin and Venereal Diseases in Belgrade during the period from 2010 to 2012, of all patients, 76.5% were men who have sex with men (13).

In this study, 38.6% of patients had anogenital warts. In the study of Zancaranano et al., anogenital warts (condyloma acuminatum) were the second most common dermatological condition in HIV infected patients with a prevalence of 11.5% (6). Human papillomavirus (HPV) prevalence and symptoms tend to increase with disease progression, and anal cancer is associated with HPV infection and receptive anal intercourse. However, it is more common in HIV-positive than in HIV-negative homosexual men [14]. These facts point to the importance of preventive cytological screening for anal lesions to reduce the burden of morbidity and mortality from anal cancer.

Syphilis was diagnosed in 1/3 of our patients and all of them were homosexuals. Several worldwide studies have reported syphilis outbreaks among MSM (15, 16, 17). The patients in our study had atypical presentations with multiple ulcers that are usually associated with HIV coinfection (18). Although they were aware of infection, patients reported recent high-risk behavior. These data indicate that HIV-infected patients with syphilis may be among the most important transmitters of HIV infection due to biologic effects of genital ulcerations, and aggravation due to continued risky behavior. Folliculitis was the next most prevalent skin disorder (10.5%) in our patients, which is in accordance with other studies where the prevalence ranged between 8% and 18% (6, 19).

The most common skin diseases diagnosed in our patients were also reported in several other studies. According to Zancaranano et al., the prevalence of dermatophyte infection of 7.1% was similar with our results, while prevalences of seborrheic dermatitis and skin xerosis were 10.6% and 9.7%, respectively (6). In the study conducted in Bangkok, among 120 patients infected with HIV, the most prevalent skin disorder was xerosis (73.3%), followed by oral candidiasis (54.2%) and seborrheic dermatitis (46.7%) (20). In a study of Kumarasamy et al., the most frequent diagnoses in HIV infected patients were dermatophytosis, papular pruritic dermatitis, alopecia and herpes zoster (4).

Although the pattern of skin disorders was comparable to previous reports, there was a significantly higher prevalence of STIs in our patients. According to Kalichman et al, persons with HIV/AIDS report high rates of morbidity and symptoms of STIs (21).

In Western Europe, STIs have been disproportionately diagnosed among HIV-positive MSM in the post-HAART era (12). It may be explained by an increase in high risk behavior due to treatment optimism, growing population of sexually active HIV-positive MSM and HIV-positive homosexual men unaware of their HIV status.

Our findings together with others, highlight the need for education of sexually active persons with HIV about consequences of STIs, as well as about risks of transmission of drug resistant HIV strains, safe sex practice and consistent condom use. Furthermore, routine testing for STIs and anal cytology screening should be encouraged and offered to HIV-positive MSM.

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### Abbreviations

HIV - human immunodeficiency virus  
 AIDS - acquired immunodeficiency syndrome  
 HAART - highly active antiretroviral therapy  
 STIs - sexually transmitted infections  
 MSM - men who have sex with men

## Dermatoze i seksualno prenosive infekcije kod pacijenata sa HIV infekcijom/AIDS koji su pregledani u Gradskom zavodu za kožne i venerične bolesti u Beogradu: serija od 38 pacijenata

### Sažetak

Uvod: U toku infekcije virusom humane imunodeficijencije (HIV – eng. *human immunodeficiency virus*) i kod pacijenata sa sindromom stečene imunodeficijencije (AIDS – engl. *acquired immunodeficiency syndrome*), mogu se javiti različita dermatološka oboljenja.

Cilj: Cilj rada bio je da se utvrdi prevalencija i vrsta kožnih i polnih bolesti kod osoba sa HIV/AIDS-om. Materijal i metode: Ispitivanje je obuhvatilo sve osobe inficirane HIV-om koje su se konsektivno javile dermatovenerologu u Gradskom zavodu za kožne i venerične bolesti u Beogradu u periodu od januara

2011. do juna 2012. godine.

Rezultati: Preko 80% pacijenata bili su muškarci koji su imali seksualne odnose sa muškarcima. Najveća prevalencija zabeležena je za anogenitalne bradavice (36,8%) i sifilis (34,2%), a potom za folikulitis (7,9%) i dermatofitne infekcije (7,9%).

Diskusija i zaključak: Visoka prevalencija polno prenosivih infekcija kod pacijenata inficiranih HIV-om, ukazala je na značaj edukacije o bezbednim seksualnim tehnikama, stalnoj upotrebi kondoma, posledicama polnih bolesti i rizicima transmisije rezistentnih sojeva HIV-a u ovoj populaciji.

### Ključne reči

HIV; Kožne bolesti; Seksualno prenosive bolesti; Sindrom stečene imunodeficijencije; Faktori rizika