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Kaposi's Sarcoma and Psoriasis in a naïve HIV-positive patient: a case report

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ABSTRACT: The introduction of combined Anti-Retroviral Therapy has modified the natural history of Human Immunodeficiency Virus (HIV) infection, leading to an increase in life expectancy of the patients living with HIV. Immune deficiency can lead to opportunistic infections and an increased risk of autoimmune disease and malignancy. Here we describe the case of a patient affected by psoriasis, HIV infection and Kaposi's Sarcoma.

Keywords: Kaposi's Sarcoma, Human Immunodeficiency Virus, Psoriasis.

INTRODUCTION

The introduction of combined Anti-Retroviral Therapy (cART) has modified the natural history of Human Immunodeficiency Virus (HIV) infection, leading to an increase in life expectancy of the patients living with HIV (PLWH)[1-21]. However, it is not able to eliminate the virus[22-24].

cART has brought an increased survival and a reduced mortality for Acquired Immune Deficiency Syndrome (AIDS)-related diseases[25-28].

Many of the clinical features of HIV/AIDS can be ascribed to the immune deficiency developed by infected patients. The progressive destruction of the immune system leads to opportunistic infections, as well as an increased risk of autoimmune disease and malignancy[29-35].

Kaposi's sarcoma (KS) is a multifocal angio-proliferative neoplasm characterized by reddish-purple-brown papules, plaques, and nodules[20]. Its clinical heterogeneity depends on the host immune system[20,21]. Moreover, HIV-positive patients are commonly affected by skin disorders, which are often associated with high morbidity and mortality[36]. HIV infection and psoriasis share the chronic inflammatory status, that can induce some neoplastic processes[37-47]. We describe the case of a patient with Kaposi's Sarcoma, HIV infection and Psoriasis.

CASE REPORT

A 37-year-old man, from Sri-Lanka, was accompanied to the clinic of Infectious Diseases of the "G. Martino" University Hospital in Messina (Messina, Italy) because of a Kaposi's Sarcoma in nodular phase confirmed by biopsy. He referred to the dermatologic clinic for a psoriasis vulgaris poorly responsive to cyclophosphamide.

An oral HIV test was performed, resulting positive. This test was followed by a serological confirmatory test. Among the risk factors for the infection, he reported multiple unprotected homosexual relations since the age of 17.

He complained of cough, burning pain in the left leg and itch. Upon arrival, physical examination revealed multiple psoriatic plaques and numerous nodular and macular lesion all over the body, especially on legs and arms. Submandibular, laterocervical, supraclavicular and inguinal lymphadenopathies were appreciable bilaterally. He was then admitted to the Infectious Diseases ward with the diagnosis of Kaposi's Sarcoma and AIDS. He was not febrile (temperature 36.0°C), his heart rate (HR) was 60 beat per minute (bpm) and his blood pressure (BP) 120/60 mmHg.

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Blood tests performed showed a white blood cell (WBC) count of 3,200 cells/µL, with 46% of neutrophils and 46% of lymphocytes. Procalcitonin (PCT; 0.04 ng/ml, normal values < 0.1 ng/mL), and C Reactive Protein (CRP; 0.09 mg/dL, normal values < 0.5 mg/dL) were normal. HIV viral load was 65,000 copies/ml and CD4+ T lymphocytes count was 10% (147/µL). Renal and liver function tests resulted negative (creatinine 0.6 mg/dL, normal values 0.5-1.2 mg/dL; total bilirubin 1.1 mg/dL, normal values < 1.2 mg/dL; aspartate aminotransferase, AST, 15 U/L, normal values < 42 U/L; alanine aminotransferase, ALT, 15 U/L, normal values < 50 U/L). Ferritin was 847 mg/dl, LDH 373 U/L, β2 Microglobulin 3541 mg/dl. Antiretroviral therapy (ART) with emtricitabine/tenofovir alafenamide fumarate 200/25 mg and dolutegravir 50 mg daily was promptly started. Trimethoprim/Sulfamethoxazole 160/800 mg daily was started in primary prophylaxis for toxoplasmosis. QuantiFERON-TB test was performed, resulting negative. Serologies for Leishmania, Toxoplasma, Citomegalovirus, Ebstein Barr Virus, Hepatitis (A, B, C), Herpes-Simplex 1 and 2, Syphilis, Measles, Rubella and Mumps were negative. He underwent a RX scan of the chest, which did not show parenchymal lesions, and a brain MRI which showed the presence of inhomogeneity of submandibular glands, multiple lymphadenopathy in the laterocervical and sub-angolomandibular area. Colonoscopy and gastroscopy showed no visceral lesions. CT scan of neck, abdomen and chest showed multiple lymphadenopathy in all latero-cervical, supraclavicular, axillary, aorto-caval, iliac- obturator, inguinal stations. Echocardiography was normal. The ultrasound of the abdomen showed a markedly increased spleen volume. Suspecting a lymphoma, lymph node excision was performed. Three days after the surgical excision, fever and incoercible hiccups occurred. Multiple blood cultures for bacteria and fungi were performed, resulting negative. The main microbiological tests were repeated, and they were still negative. Antimicrobial therapy with piperacilline/tazobactam and linezolid was promptly started. HIV viral load was 240 copies/ml and CD4+ T lymphocytes count was 24% (245/mmc) after 24 days of treatment. Despite a good viro-immunological control, high temperature persisted, with max peaks of 39.6°C, and his general clinical conditions did not improve. Psoriatic plaques were intensely itchy, hiccups persisted, dry cough worsened. The abdomen was globose, meteoric, distended. Anti-microbial therapy with Piperacilline/Tazobactam and Linezolid was stopped and Meropenem, Ceftobiprole and Fluconazole were started. Despite the antimicrobial therapy, the general conditions of the patient were still severe: it was then decided to start the antimicrobial therapy with Ceftazidime/Avibactam and Colistine. After few days, his general conditions progressively improved: the patient was alert, oriented in time and space, collaborative, afebrile and eupneic. His cough and hiccups improved. We discharged the patient after 30 days of admission in good clinical conditions. He is now in follow up for his Kaposi's Sarcoma, psoriasis and HIV infection.

DISCUSSION

Despite its occurrence has dramatically decreased in developed countries, KS is still the most frequent tumor in HIV-infected patients worldwide[33]. The widespread use of antiretroviral therapy has reduced KS incidence, but its prevalence is still high in sub-Saharan Africa, while is quite uncommon in Europe and in United States of America (USA). The incidence of KS is 1/100,000 in the general population, whereas in HIV-infected individuals it is around 1/20[20,33]. Moreover, the prevalence in Men who have Sex with Men (MSM) is much higher than general population. KS is caused by the Human Herpesvirus 8 (HHV8), also known as Kaposi Sarcoma-associated Herpes Virus (KSHV)[33].

KSHV (HHV8) is a herpesvirus belonging to the gamma-herpesvirus family which is able to establish persistent infections, especially in the lymphoid cells[20,23]. In conditions characterized by immune deficiency, such as transplant and HIV-infection, KSHV can cause lymphoproliferative disorders such as KS, Primary Effusion Lymphoma (PEL) and Multicentric Castleman Disease (MCD)[20].

The majority of cases of KS occur in late phases of the HIV-infection with low CD4+ T-cell counts (< 200/ml), although it has also been observed in patients on successful long-term HAART, with well-controlled HIV-infection and a CD4+ T cell count > 200/ml[20,33].

KSHV may be secreted in saliva. Even though saliva is considered the principal transmission way, KSHV can be isolated from several other fluids and cells, including semen, cervicovaginal secretions, prostate glands and peripheral blood mononuclear cells (PBMCs). Other KSHV transmission ways can be blood transfusions and solid organ transplantations (SOT)[20].

In MSM, a high rate of KSHV transmission occurs even when safe sex practices are used. Important routes of spread among MSM is probably the use of saliva as a lubricant during anal sex, oral-anal sex, and deep oral kissing[34,35].

Psoriasis is a chronic, multisystem inflammatory disease with predominantly skin and joint involvement. As a disease of systemic inflammation, psoriasis is associated with multiple comorbidities, including cardiovascular disease and malignancy[37]. Its pathogenesis is multifactorial, involving dysregulated inflammation and genetic associations[37,38]. Psoriasis affects PLWH severely and for a longer time than the general population[36]. Th1 cells and related cytokines play a major role in the pathogenesis. Treatments that are intended to suppress the T cell response may trigger the development of iatrogenic KS by causing immunosuppression[39]. In the case reported by Selvi et al[40] the authors suggest that the worsening of KS lesions despite discontinuation of systemic immunosuppressive therapy might have been related to intra-articular steroid therapy administered for psoriatic arthritis. Furthermore, in a KS patient with severe psoriasis and a history of phototherapy, the authors suggested that the occurrence of psoriasis and KS may be related to a common genetic basis (HLA A1, DR5, DR7, and DR11)

and that phototherapy may trigger virus activation and KS lesions[41]. Erdoğan et al[39] considered that psoriasis might have triggered KS development by causing immune dysregulation. Despite the significant improvements in the diagnosis and treatment of the HIV infection, KS is still an important cause of morbidity and mortality in HIV infected patients. cART represents the best weapon in the treatment of KS in PLWH, as it allows an improvement of the immune system. The development of KS seems to require latent infection with HHV-8. Other cofactors, such as a compromised immune system due to HIV or systemic immunosuppressive treatments may contribute to the development of KS. Simultaneous occurrence of KS and psoriasis is rarely reported in literature. HIV infection and psoriasis may play a concomitant role in immune dysregulation, and these conditions could favor the onset or deterioration of neoplasms such as KS.

CONCLUSIONS

We believe that careful monitoring is required for the possible role played by immune dysregulation in the onset of neoplasm in patients with psoriasis and HIV infection.

Further studies are needed to verify this relation.

Conflict of Interest:
The Authors declare that they have no conflict of interests.

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