M. Pilar Calvo-Rivera[1]
Alejandro Porras[1]
Marta Trigo-Rodríguez[2]
José M. Martínez-Ortega[3]
Luis Gutiérrez-Rojas[1,3]

Psychosis management in patients with HIV: case report

[1]Servicio de Psiquiatría, Parque Tecnológico de la Salud, Complejo Hospitalario Granada, Granada
[2]Servicio de Medicina Interna, Parque Tecnológico de la Salud, Complejo Hospitalario Granada, Granada
[3]Departamento de Psiquiatría y grupo de investigación CTS-549, Instituto de Neurociencias, Centro de Investigación de Biomedicina (CIBM), Universidad de Granada, Granada

Human immunodeficiency virus (HIV) infection can cause neuropsychiatric disorders such as cognitive impairment, behavioural difficulties or psychiatric symptoms –for instance, mania and psychosis. HIV patients with psychiatric comorbidities need an appropriate treatment which tackles the HIV infection as much as the particular mental symptoms.

Here we present the case of a patient suffering from delusions, which turned out to be caused by encephalitis secondary to a previously unknown HIV infection. A review of psychosis in HIV-infected patients is also presented. This review is focused on the epidemiology, etiopathogenesis and clinical presentation of HIV-induced psychosis, as well as the recommended pharmacological treatment (antiretroviral therapy and antipsychotic medication) and the expected treatment response. We also present wide information concerning pharmacological interactions between antiretroviral and antipsychotic medications that we hope will help the clinician to better manage this complex condition.

Keywords: HIV, Psychosis, Treatment, Antiretroviral, Antipsychotic

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Manejo de la psicosis en pacientes con VIH: a propósito de un caso

La infección por el virus de la inmunodeficiencia humana (VIH) puede dar lugar a alteraciones neuropsiquiátricas tales como déficits cognitivos, alteraciones comportamentales o sintomatología psiquiátrica como manía o psicosis secundaria. La evolución y curso pronóstico de los individuos con VIH que presentan comorbilidad psiquiátrica dependerá en gran medida de que se ofrezca un tratamiento adecuado que incluya, por una parte, tratamiento del factor etiológico (VIH) y, por otra, tratamiento de los síntomas psíquicos en cuestión.

A partir de la presentación del caso clínico de una paciente con encefalitis en el contexto de una infección por VIH no conocida, que debuta con sintomatología psicótica en forma de trastorno por ideas delirantes de tipo somático, ofrecemos una revisión acerca del manejo de la psicosis en pacientes VIH. Dicha revisión se centra en la epidemiología, etiopatogenia y presentación clínica de la psicosis asociada al VIH así como en el manejo farmacológico recomendado (antirretroviral y antipsicótico) y su particular respuesta al mismo. Ofrecemos al mismo tiempo amplia información acerca de las principales interacciones entre los fármacos antipsicóticos y antirretrovirales que otorgarán al clínico un manejo más adecuado de dichos pacientes.

Palabras clave: VIH, Psicosis, Tratamiento, Antirretroviral, Antipsicótico

Correspondence:
Luis Gutiérrez-Rojas, M.D., Ph.D.
Facultad de Medicina, Departamento de Psiquiatría
Av. Madrid 11
18071 Granada Spain
Tel.: (+34) 958 240704
Fax: (+34) 958 240730
E-mail: gutierrezrojasl@hotmail.com

INTRODUCTION

Individuals infected with the human immunodeficiency virus (HIV) can suffer psychoneurological alterations secondary to opportunistic infections or malignancies, or due to the presence of the virus, in primary form, in the Central Nervous System (CNS) - a sufficient and necessary cause itself[1]. In relation to the latter, it is known that HIV is a neurotropic and neuroinvasive virus, capable of penetrating the CNS at an early stage (results show the detection of viral RNA in cerebrospinal fluid from the 8th day of transmission)[2] and maintaining persistent infection. Thus, the CNS transforms into a reservoir of the virus, allowing it to hide from the immune system, replicate itself and mutate due, in part, to the low penetrability of the majority of antiretrovirals through the blood-brain barrier (BBB). The invasion of the CNS takes place primarily through infected monocytes that cross the BBB. In the CNS these monocytes mutate into persistently infected perivascular macrophages. Other likely-related mechanisms involve infection of choroid plexuses and direct endothelial capillary cell infection. Whilst, microglia cells, monocytes, macrophages and astrocytes are directly infected by HIV, neurones and oligodendrocytes are not invaded but they are damaged by the inflammatory response induced in the CNS by the virus[3]. Neuronal loss takes place through the release of endogenous neurotoxins including pro-inflammatory cytokines like TNF-α, IL-1β and interferon (IFN)-ϒ from macrophages and, to a lesser extent, from astrocytes[4,5], stimulated by viral proteins gp 120 and Tat present in the viral envelope[1]. These substances act as intermediary agents in the inflammation cascade and trigger neuronal damage by toxicity[6,7].

One of the principle complications derived from the penetration of the virus in the CNS is HIV encephalopathy. This encephalopathy constitutes the histopathological lesion and should not be used to describe clinical symptoms of the virus[7]. Occasionally these lesions have been observed in autopsies of patients infected with HIV despite clinical silence[7]. Before the introduction of antiretroviral therapy (ART), the most severe form of encephalopathy, secondary to HIV infection, previously known as AIDS dementia complex, occurred practically exclusively in the later stages of infection, its presence being a defining criteria of AIDS. Currently, thanks to the generalisation of ART, the prevalence of HIV-associated dementia (HAD) has significantly declined. Nonetheless, even in the post-ART era, the appearance of neurocognitive deficits and behaviour changes in HIV patients is still a reality. The clinical expression of these deficits is varied: from apathy or irritability to memory impairment, shortening of attention and concentration spans, impairment of executive functions; as well as mobility impairment such as incoordination, slowing-down, spasticity or paraparesis; or also, as psychiatric symptoms, such as secondary mania and psychosis[8]. These symptoms can be indistinguishable from depression, especially in their initial stages[9]. They can also go unnoticed by the patient him-/herself, in what is known as asymptomatic neurocognitive impairment (ANI), which is only detectable through specially designed tests. On the other hand, minor cognitive-motor disorders are also found among patients with a low to moderate handicap. This, together with HAD and ANI constitutes the nosologic entirety currently called HIV-associated neurocognitive disorders (HAND). The causes of the development of HAND in certain patients, even those receiving treatment and maintaining a good control of the infection, are yet to be clarified. Nonetheless, results of completed studies state that the appearance of neurodegenerative phenomenon in these individuals is a result of the interaction between the virus and the host (taking into account variation in neuro-virulence, genetic susceptibility, age, etc.) and the sum of certain comorbid phenomenon such as alcohol and drug consumption[6]. If specific criteria for the diagnosis of HIV encephalopathy are not present the syndrome must be differentiated from other illnesses that affect the CNS. The appearance of previously mentioned clinical symptoms alongside a pattern of cerebral atrophy in imaging tests of HIV positive patients should lead to the investigation of possible HAND diagnoses.

Meningitis, encephalitis and meningoencephalitis can appear as initial clinical manifestations of primary infection within the first three months of infection, with an estimated incidence in 17% of patients[10]. Despite its infrequent presentation, this clinical presentation is important for two key reasons: firstly, because of the interest in differential diagnosis of these symptoms aiming to avoid delays in the diagnosis of severe clinical presentation and HIV infection; secondly, due to the necessary start of ART in these patients, to prevent an accelerated progression of the infection, correlated with these forms of presentation[11], as much as due to the excellent clinical response of the clinical presentation.

Hereafter, we are presenting the case of a patient with encephalitis in the context of unknown HIV infection, which starts with psychotic symptomatology with disorder due to somatic delirium.

CLINICAL CASE

Woman, 55 years of age, divorced without children. She lives alone. She is the eldest of three sisters. She studied psychology and worked sporadically in this sector. For the last 15 years she was working in a telecommunications company before retiring three years ago. Denies any problems at work. Maintains rare interpersonal relationships.

She has neither previous psychiatric records nor a history of mental illnesses in her family. She has no physical health history of interest nor any known drug allergies. She denies consuming toxic substances.

The patient presents with depression with apathy, clonal anergy, low mood and weight loss. She was being treated with fluoxetine 20 mg/day as prescribed by her general practitioner seven months previously, little response was noted.

In the last month, the family have started to notice a change in her behaviour: her consumption of normal foods has decreased significantly claiming "It's necessary because I'm going to have surgery", losing 10 kg in weight, her speech has become incoherent – "she tells her relatives she has a brain tumor and they have them too, saying that she's going to buy a machine that will allow her to diagnose different brain diseases". What's more, there have been several episodes of verbal heteroaggressivity aimed at family members. This has caught the family's attention and they decide to visit her, finding the house dirty and neglected. The patient is found to have significant neglect of her personal hygiene.

The following day the patient disappears between midday and 1am. She is found wandering alone in Accident and Emergency where she is taken for Psychiatric. She claims to have a benign brain tumour which she has self-diagnosed using the internet and she is awaiting surgical intervention. She admits not having slept for the last few nights as she has been waiting for the phone call from the doctor.

The family is contacted and they confirm having noticed her strange behaviour over the last month.

After a basic examination and a urine toxicity test with normal results, she is admitted to Mental Health diagnosed with a subsidiary psychotic episode.

Physical examination

The patient is conscious, spatially aware and disoriented in time. She appears worried and is rarely collaborative. Distal examination of cranial, sensory and motor nerves shows she has slightly mydriatic pupils and normal osteotendinous reflexes. Both flexor plantar reflexes are present and normal.

Psychopathalogical examination

At the time of the psychological examination the patient is conscious, disoriented in time, partially spatially disoriented, and rarely cooperative. She shows a notable lack of care for personal hygiene and clothing. She has a defiant attitude, showing aggression to those present. She has demonstrations of motor tension. As concerns mood, dysphoria is dominant together with light hypomimia with no demonstration of marked depressive mood. Long and short term memory are still functioning. Thoughts are focused on a somatic, unstructured delirium about having a brain tumour. No foreground senso-perceptive changes or phenomenons foreign to the self are noted. She has irregularity in sleep pattern over the last few days and marked weight loss resembling cachexia.

Transfer to the ward

Once on the psychiatric ward treatment is with olanzapine (10 mg/day), clonazepam (0.5 mg bd) lormetazepam (2 mg in case of insomnia) and haloperidol (5 mg intramuscular if oral medication is not taken) is offered.

24 hours after arriving, the patient shows a fever of 38ºC with no apparent source and sleepiness. During the physical examination she barely responds to stimuli and has barely reactive isocoric pupils. Urgent general analysis is requested. It reveals bicytopenia (leukopenia at the expense of lymphocytes and anaemia with haemoglobin 8.8 g/dl) and elevated PCR. A cranial CAT scan is urgently taken, in which atrophic cortical changes without mass effect. The patient is thus diagnosed by the department of Internal Medicine. She is found sweating in a comatose state with Glasgow 3/15, with no signs of meningism. The patient is given a lumbar puncture, showing clear liquid in "rock water" with a pressure of 14cm of H_2O which contains: glucose 69, proteins 40, leukocytes 0, red blood cells 1 and adenoise deaminase (ADA), culture, cytology, PCR virus Herpes and enterovirus and onconeural antibodies are attracted.

Treatment with acyclovir is started, suspecting possible encephalitis until Herpes PCR and general analysis with TSH, syphilis serology, EBV, HIV, CMV, ANA/ENA antibodies, proteinogram and tumour markers are received.

In the following days, the patient appears confused, dysarthric, with isolated episodes of agitation requiring the use of restraints. Somatic delirium and disorganised discourse persist. She is examined by a neurologist who reveals that the patient has encephalitis and stops the treatment with acyclovir, noting that the change in level of consciousness could be due to the presence of an isolated spiking fever in the weakened patient (weakened due to her malnutrition, anaemia and leukopenia) in addition to the start of the depressant treatment of the CNS, In the following days, a progressive improvement in the alteration of the level of conscience occurs following the decrease in sedative medication (dose of olanzapine is reduced to 5mg/day and clonazepam dose is progressively decreased until stopped). The patient even starts walking with instability. Fever spikes keep occurring until the sixth day after hospitalisation reaching highs of 38ºC.

Finally, on the seventh day after hospitalisation, serological results reveal that the patient is HIV-1 positive, illness unknown by the patient until the time.

The remainder of tests undergone show the following

results: syphilis negative; Epstein-Barr Virus (EBV): IgG + IgM – (no active infection); cytomegalovirus (CMV): IgG>250, IgM – (no active infection); HBV and HCV negative; HAV IgG + (past infection); auto-immunity study negative, tumour markers negative, TSH hormonal study normal, Vit D 13.5 (light deficit).

Finally the patient is admitted to the Infectious Diseases unit within the Internal Medicine Service.

Developping during admission

Once in the Infectious Diseases unit, an MRI scan is taken revealing normal results and an immune-virology screen reveals a total CD4 count of 30 cells/mm^3 (7%) and viral serum charge 1,062,917 copies/ml. Similarly, the viral charge in the CSF is measured as 11,260 copies/ml. These complimentary tests demonstrate the existence of advance HIV infection with a severe level of immune-depression and raised viral charge both in the blood and the CNS (stage C3 of AIDS). Under these circumstances, the decision is made to postpone antiretroviral therapy until the existence of tuberculosis infection can be eliminated by the IGRA test, which is negative. Later treatment with tenofovir, emtricitabine and cobicistat/elvitegravir is started. The patient shows a good tolerance while the dose of 5mg olanzapine every 24 hours is continued. Tenofovir, emtricitabine and cobicistat/elvitegravir is a fixed-dose drug combination for the treatment of HIV/AIDS. Tenofovir and emtricitabine are reverse transcriptase inhibitory drugs, elvitegravir acts as an inhibitor of the integrase and cobicistat is an inhibitor drug of the P450 cytochrome which increases the activity of the aforementioned drugs.

In the first days after admission, the patient acts abnormally, throwing herself to the floor, leading to the use of restraints. She also maintains her delirious idea of having a brain tumour and continues to walk with instability, possibly caused by asthenia. She has sporadic episodes of time and space disorientation but remains apyretic.

Around the fifteenth day after her admission, the patient starts to become more and more negativist and hypoactive, refusing to take food or medication or to open her eyes. A few days prior, she suffers isolated spiking fevers which are treated with antipyretics; the fevers have no neurological focality or associated symptomatology. Given the patient's unusual conduct, an urgent consultation with a psychiatrist is made, who decides on treatment with a haloperidol drip (10-10-10) because of the medication's efficiency in controlling agitation. The drip is sustained for a few days and then gradually reduced until no longer used.

Progressively the patient's clinical state improves, she becomes more collaborative, speaks more coherently and her initial delirium gradually disappears. Likewise, her behaviour and difficulty in walking improves.

As the patient's clinical state improves she explains that she has taken part in unsafe sexual practices. Family members were informed in days previously. After over a month of hospitalisation the patient is finally discharged.

Outpatient follow-up

The patient attends her consultation at the Infectious Diseases unit normally. She explains that she has been stable since her discharge, not suffering recurrence of symptomology and maintaining similar viral charge and slightly higher levels of CD4 as at the time of discharge. In this time and until now her treatment with tenofovir, emtricitabine and cobicistat/elvitegravir continues.

As regards the psychiatric symptomology, she does not attend the scheduled consultation with Mental Health. In her last visit to her General Practitioner, seven months after her discharge from hospital, the patient presents no psychological symptoms. Delirium has completely stopped and the patient is no longer receiving psychopharmalogical treatment, although the date of termination of treatment could not be identified precisely.

DISCUSSION

We found ourselves faced with the case of a patient whose initial psychotic episode appears as a clinical demonstration of encephalopathy due to previously unidentified HIV. Faced with this case we can establish the following differential diagnosis:

- Psychotic disorder due to the consumption of multiple drugs or psychotropic substances (CIE-10; F19.5): psychotic disorders which present during, or immediately after, the consumption of a drug (generally, within the first 48 hours). In our case, this diagnosis can be discarded given that according to her personal background the patient reveals no toxic habits.
- Serious depressive episode with psychotic symptoms (CIE-10; F32.2): although the patient starts with a depressive clinical presentation before the start of the psychotic clinic, at the time of admission only light hypotimia is detected without reaching a clear depressive state.
- Acute polymorphic psychotic disorder (CIE-10; F23): this disorder is characterised by the acute appearance (generally fewer than two weeks) of varying psychotic symptoms, normally associated with a stressful factor. The presence of organic cause such as delirium, dementia or cerebral shock eliminated this diagnosis from possibility.
- Delirium (CIE-10; F06.2): this disorder is characterised by the presence of recurring delirious ideas, possibly

Table 1 Possible pharmalogical interaction between protease inhibiting antiretroviral medicines and antipsychotic medicines[22]

INTERACTION	ANTIRETROVIRALS PIs									
ANTIPSYCHOTICS	ATV	DRV	FPV	IDV	LPV/r	NFV	RTV	SQV	TPV/r	COMMENTS
Chlorpromazine	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
Clozapine	Medium	Medium	Medium	**High**	Medium	Medium	**High**	Medium	Medium	
Haloperidol	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium		
Olanzapine	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium		
Perphenazine	Low	Low	Low	Low	Low	Low	Medium	Low	Low	Levels of some antipsychotics can be increased. Monitor toxicity
Pimozide	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	
Quetiapine	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
Risperidone	Low	Medium	Low	Low	Low	Low	Medium	Low	Low	
Thioridazine	Low	Medium	Low	Low	Low	Low	Medium	Low	Low	

PIs: Protease Inhibitors, ATV: Atazanavir, DRV: Darunavir, FPV: Fosamprenavir, IDV: Indinavir, LPV/r: Lopinavir, NFV: Nelfinavir, RTV: Ritonavir, SQV: Saquinavir, TPV/r: Tipranavir

Table 2 Possible pharmalogical interactions between inverse transcriptase inhibiting antiretroviral medicines and antipsychotic medicines[22]

INTERACTION	NARTIs							NNRTIs				
ANTIPSYCHOTICS	ABC	AZT	D4T	DDI	3TC	FTC	TDF	EFV	ETV	NVP	MRV	COMMENTS
Chlorpromazine	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Interm	Levels of both medicines can be increased
Clozapine	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low		
Haloperidol	Low	Low	Low	Low	Low	Low	Low	Interm	Interm	Interm		Monitor efficiency with NVP and toxicidad with EFV.
Olanzapine	Low	Low	Low	Low	Low	Low	Low	Interm	Interm	Interm		
Perphenazine	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low		
Pimozide	Low	Low	Low	Low	Low	Low	Low	**High**	Interm	Interm		Monitor efficiency with NVP, efficiency and toxicidad with EFV
Quetiapine	Low	Low	Low	Low	Low	Low	Low	Interm	Interm	Interm		PIs potentiate levels of quetiapine NNRTIs diminish with the effect of quetiapine
Risperidone	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low		
Thioridazine	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low		

ITIANs: Inhibidores de la transcriptasa inversa análogos nucleótidos/ nucleósidos, ITINANs: Inhibidores de la transcriptasa inversa no análogos nucleósidos, ABC: Abacavir, AZT: Zidovudina, D4T: Estavudina, DDI: Didanosina, 3TC: Lamivudina, FTC: Emtricitabina, TDF: Tenofovir, EFV: Efavirenz, ETV: Etravirina, NVP: Nevirapina, MRV: Maraviroc

Table 3 Action mechanism of principle pharmalogical interactions between antipsychotics and antiretrovirals

ANTIPSYCHOTIC	ANTIRETROVIRAL	INTERACTION
Clozapine	Indinavir (IDV)/ Ritonavir (RTV)	Increased clozapine and plasmatic levels. IDV and RTV inhibit the metabolism of clozapine by the CYP 450 3A4 pathway. Higher risk of sedation.
Haloperidol	Indinavir (IDV)	Increased plasmatic levels and activity of haloperidol. IDV competitively inhibits the metabolism of haloperidol by the CYP 450 2D6 pathway. Higher risk of extrapyramidal effects.
Haloperidol	Efavirenz (EFV)	Decreased plasmatic levels of haloperidol. EFV induces the metabolism of haloperidol by the CYP 450 3A4 pathway. Decreased efficiency of haloperidol.
Haloperidol	Etravirina (ETV)	Decreased plasmatic levels and effects of haloperidol. ETV induces the metabolism of haloperidol by the CYP 450 3A4 pathway.
Haloperidol	Tenofovir, emtricitabina y cobicistat/elvitegravir	Co-administration with cobicistat can increase the plasmatic concentration of haloperidol or CYP 450 3A4 or 2D6 isoenzyme and/or glycoprotein P transporter drugs.
Olanzapine	Ritonavir (RTV)	Decreased levels of olanzapine. RTV induces the metabolism of olanzapine by the CYP 450 1A2 pathway and the uridine 5'diphosphonate glucoronil transferase enzyme responsible for the olanzapine clearance. Lower sedation.
Olanzapine	Tenofovir, emtricitabina y cobicistat/elvitegravir	No known interaction.
Pimozide	Atazanavir (ATV)/Darunavir (DRV)/Fomsepravir (FPV)/Lopinavir (LPV)/Nelfinavir(NFV)/Salquinavir (SQV)/Indinavir (IDV)/ Ritonavir (RTV)/Efavirenz (EFV)/ Etravirina (ETV)/	Significantly increased plasmatic levels of pimozide. These medicines potently inhibit the metabolism of pimozide by the CYP 450 3A4 pathway. Increased risk of development of ventricular arrhythmias, such as ventricular tachycardia and torsades de Pointes, cardiac arrest or sudden death.
Quetiapine	Indinavir (IDV)/Ritonavir (RTV)	Increased levels of quetiapine by the inhibition of its metabolism by the CYP 450 3A4 pathway. Increased risk of sedation and orthostatic hypotension.
Quetiapine	Efavirenz (EFV)/ Etravirine (ETV/ Nevirapine (NVP)	Decreased levels of quetiapine by the inhibition of its metabolism by the CYP 450 3A4 pathway. Decreased effects of quetiapine.
Risperidone	Ritonavir (RTV)	Increased levels of risperidone. RTV inhibits its metabolism by the CYP 450 2D6 pathway. Increased risk of extrapyramidal symptoms and sedation.

accompanied by hallucinatory phenomena. In order to diagnose delirium, there must be evidence of a lesion, cerebral malfunction or lesion or a systemic illness from which the symptoms can be derived. There must also be a temporal link between the development of the underlying illness and the start of the psychopathological syndrome, reoccurrence of the psychopathological disorder when the patient improves or the cause of the underlying illness is treated and absence of any other etymology that could explain the psychopathological syndrome. In our case, the case of delirium is secondary to HIV.

As concerns the psychotic symptoms that can appear in HIV-positive patients a distinction must be made between primary psychoses, in which psychotic symptomatology precedes HIV infection (schizophrenia, delirium, schizoaffective disorder, etc) and secondary psychosis, due to the organic alteration of the HIV infection itself. In the clinical case of interest, we find a secondary psychosis directly related with

the HIV infection of the patient. The development of the new onset psychosis in HIV positive patients is around 0.2 and 15% and it tends to develop in advanced stages of illness and in cases of HIV encephalopathy[12].

When explaining the pathogenesis of *de novo* psychoses in HIV-infected patients several theories have been suggested: subcortical degeneration caused by HIV or by the presence of other viral infections, psychosis secondary to HIV encephalopathy and brain damage by opportunistic infections or the presence of underlying dementia[13]. Notably, HIV-infected patients show lower blood levels of essential amino acids, such as tryptophan or phenylalanine, which act as precursory molecules for neurotransmitter synthesis[14]. This dysregulation in amino acid synthesis could maintain a relationship with the appearance of neuropsychiatric symptoms[14]. Furthermore, various studies highlight that treatment of HIV-infected patients with antiretroviral efavirenz can lead to the appearance of neuropsychiatric symptoms, including *de novo* psychosis[15,16]. The most frequently observed symptoms in secondary psychosis are delusions of persecution or grandeur, or somatic symptoms associated with visual and audio hallucinations and changes in the emotional domain; however, extravagant delusions often observed in primary psychoses are unusual[13]. It has been shown that various factors present in HIV-positive patients increase the risk of developing psychosis, including: HIV-positive patients who do not follow treatment, presence of cognitive deterioration or dementia or a history of psychiatric illness or substance abuse[8].

In relation to the treatment, the appearance of psychosis secondary to HIV encephalopathy is an indication for use of antiretroviral treatment independent of the present viral load as the patient is in stage 3 of the illness[1]. The treatment should combine etiologic treatment using ART and symptomatic treatment using antipsychotics. HIV-infected patients have been described as being more sensitive to the side effects of antipsychotics, and are especially more prone to extrapyramidal symptoms due to the loss of dopaminergic neurones[17]. Thus, if treatment with antipsychotics is necessary, atypical antipsychotics should be used due to the lower risk of development of extrapyramidal effects. Similarly, treatment should be started with small doses of the medication, with close monitoring to check for development of ide effects[13]. In the case of atypical antipsychotics, clozapine should be used with caution due to the high risk of patients with a significant depletion of lymphocyte population developing agranulocytosis[13]. As concerns risperidone, an interaction with ritanovir antiretroviral has been observed, which can increase the levels of risperidone in the blood, increasing the risk of patients developing extrapyramidal effects and malign neuroleptic syndrome, and so the combination of these two medicines is not advised. Elderly patients have a higher risk of developing toxicity during medical treatment. Between 15 and 25% of new cases of HIV infection are patients over 50 years[19], amongst whom the period between contraction of the infection and the development of AIDS is shorter than in young patients[20]. The appearance of psychosis secondary to HIV, which often occurs in the final stages of illness, therefore concerns elderly patients. This patient group have a higher risk of developing extrapyramidal symptoms[21]. These patients should be treated with even smaller doses of antipsychotic treatment than younger patients.

In our case, the patient was treated with small doses of olanzapine (5 mg) until the end of her hospitalisation that, even though it started prior to the knowledge of the underlying aetiology, proved to be an appropriate treatment as in this case she was treated with an atypical antipsychotic and hence there was a lower risk of developing extrapyramidal effects in HIV-infected patients. Similarly, for a few days haloperidol was added to the treatment to restrain behavioural changes, although following the review it has been agreed that this was not the most appropriate treatment.

However, there are very few studies about the treatment of psychosis secondary to HIV infection, and so it is impossible to establish standardised action guidelines on the subject. From what has been observed until now, the consensus is that the use of atypical antipsychotics should be recommended, starting with low doses with close monitoring. Also, special care must be taken with the use of clozapine and the combination of risperidone and ritanovir.

Finally, this case demonstrates a rapid recovery following the discovery of the aetiology underlying the visible psychopathological changes, enabling the initiation of adequate treatment – both aetiological (antiretroviral) and symptomatic (antipsychotic).

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