

## Therapeutic Particularities with Depot Medications in Schizophrenia

CERASELA SÂRBU<sup>1\*</sup>, GEORGE-ȘTEFAN BĂDESCU<sup>1</sup>,  
ALEXANDRA-ELISABETA HROMEI<sup>1\*</sup>, IZABELA DORA STĂNIA<sup>1</sup>

<sup>1</sup>Department of Psychiatry, Clinical Hospital of Neuropsychiatry Craiova

**ABSTRACT:** Schizophrenia is a neurodegenerative disease with personality degradation, changes in behavior, cognition, affective disorder and reduced socio-professional insertion. Early diagnosis is necessary and maintenance is ensured by antipsychotic treatment and for non-compliant patients there is an alternative to depot medication that greatly improves therapeutic adherence. The study presents the case of a 43-year-old patient diagnosed with paranoid schizophrenia using the Diagnostic and Statistical Manual of Mental Disorders V-TR criteria that showed a favorable evolution under depot treatment.

**KEYWORDS:** Schizophrenia, psychodiagnosis, depot treatment.

### Introduction

Schizophrenia is a major psychiatric disorder with extreme neurobiological and neurobiochemical involvement characterized by personality destruction and cognitive impairment [1].

The incidence of schizophrenia falls within a broad range of 50-250‰ with a prevalence of 1%, with gender distribution being relatively equal [2].

In the etiology of schizophrenia, the most commonly criticized is the neurobiochemical hypothesis, the hypothesis that supports the imbalance of neurotransmitter systems at the cerebral level. Thus, it is believed that in schizophrenia there is a mesolimbic dopaminergic hyperactivity and a hypoactivity in the prefrontal cortex which would explain the positive symptoms, but also the cognitive dysfunction and the negative symptoms of the disease [3].

Also, schizophrenia has been shown to impair the serotonergic and noradrenergic neurotransmitter systems, theory that is also supported by the benefits of atypical antipsychotic treatment, especially due to its action on 5HT<sub>2A</sub> serotonin receptors [4].

An important role in the etiology and evolution of schizophrenia is attributed to the GABA amino acid by reducing the inhibitory effect of these neurons, which leads to an increase in dopaminergic activity in the mesolimbic and temporal cortex, thus accentuating the psychotic symptom of the disorder.

Current hypotheses on schizophrenia, supported by neuroimaging studies of MRI and CT, bring into discussion the vertical

disconnectivity between cortical and subcortical circuits-between the prefrontal cortex, the thalamic and cerebral nuclei (cognitive dysmetria, considered primary schizophrenia symptom) [5].

It has also been demonstrated in schizophrenia that there is a horizontal disparity characterized by medial-line structural defects associated with cognitive deficits.

At cellular level, primary apoptotic mechanisms occur due to neurodevelopmental disturbances (obstetrical trauma, fetal distress, postnatal cerebral lesion), especially prefrontal, temporo-limbic, striatal and entorhinal, mechanisms which are responsible for primary therapeutical resistance. Long-term classic antipsychotic therapy leads to secondary apoptotic mechanisms due to D<sub>2</sub> receptor blockade, which generates release of free radicals with increased oxidative stress as a consequence of glutamatergic activity. This type of apoptosis targets the hippocampus and the parahippocampus region, leading to the amplification of primary cognitive deficits and therapeutic resistance [1].

Initially, treating symptoms in schizophrenia was based on conventional antipsychotics with favorable effect on positive symptoms due to blockade of D<sub>2</sub> receptors. Due to the nonselective blocking of more than 80% of D<sub>2</sub> receptors and multi-receptor action, first-generation antipsychotics lead to significant extrapyramidal, anticholinergic, cardiovascular and cardiotoxic side effects, significantly decreasing compliance and adherence to treatment. Although efficacy on the positive symptoms is increased, this type of antipsychotics does not even cover and can even accentuate the spectrum of negative symptoms

and favors cognitive dysfunction by secondary cellular apoptotic mechanisms, as mentioned in the previous paragraph [6].

Current schizophrenia therapy is based on the use of atypical antipsychotics with the property of blocking D2 receptors selectively and in a lower proportion compared to conventional antipsychotics as well as action on 5HT2A receptors with the advantages of limiting adverse effects as also having efficacy on negative symptoms and preserving or even improving cognition, which is particularly important for the proper functioning of patients with this type of symptomatology [7].

As a result of the fact that schizophrenia is characterized by altering the insight of the disease and the consequence of long duration of treatment, a large proportion of patients show reduced compliance and a high level of discontinuation of oral antipsychotic therapy. Thus, depot medication offers a favorable alternative to patients with non-compliant schizophrenia, the arguments for using this medication are represented by the following advantages: short and long-term efficacy, convenient biannual, monthly or quarterly administration, the ability of the therapist to have control over each dose and increased adherence to therapy [8].

Initially, depot forms of conventional antipsychotics were developed such as: Pipotiazine palmitate Flupentixol, Zuclopenthixol, Haloperidol decanoate, Pimozide, Clopenthixol, but with disadvantages like the risk of adverse effects especially extrapyramidal, anticholinergic, neurological, somatic and psychoendocrine complications suggesting the disconnectivity potential of these substances.

Later on, the depot forms of atypical antipsychotics appeared: Olanzapinum prolonged release, Risperidonum prolonged release, Paliperidone palmitate, Paliperidone prolonged release, with many advantages over conventional forms: reduction of extrapyramidal symptoms, reduced sedative effect, reduced cardiotoxicity, reduced proconvulsive effects, improved adherence to long-term therapy, superior tolerance and efficacy, improved quality of life benefiting social reintegration [9].

## Case report

The study shows the case of a 43-year-old female patient who lived in an urban area, known since 2004 with the diagnosis of paranoid schizophrenia, being hospitalized

through the emergency service for: delusional ideas of persecution, pursuit influence, prejudice, relation, interpretation, suspicion, unusual perceptual phenomena, behavioral disorders, social withdrawal, hostile attitude towards close relatives, solitude, bizarreness, marked decline in professional performance with incapacity to perform service duties (nurse), sleeping disorder.

From the anamnestic data there were no elements of heredity of the affection, no addictive tendencies, and the patient does not present other psychiatric or somatic comorbidities.

The personal context outlined a premorbid personality of the schizoid type characterized by numerous intra-family conflicts with consecutive disconnection, the tendency to social isolation, lack of intimate interpersonal relations or friendship, with emotional numbness, indifference to the external environment and loneliness.

The personality disorder in the Cluster A category is supported by the patient's personal history that highlights a quiet, docile, withdrawn child, less interested in relationship activities since kindergarten. School life had been without events of anti-relational impact, instead, developing, over time, amid the distorted family context, tense relationships with the family, numerous conflicts with the patient's parents, hostility to the mother, father and grandparents.

The relational family model was a basis of the psychological mark to create an affective change of ambivalent and inversion type to the mother. Thus, the patient received dual messages from the more bizarre father, little concerned about the affective relationship with family members, even imposing and restrictive, and the hyperprotective, authoritarian, coercive mother. In this way, the patient created a refuge represented by the aunt living nearby, benefiting from a dispositional and affective pseudo equilibrium and counseling. This benefit also manifested itself in the professional life, helping to maintain the patient's job in the financial field.

Thus, from a psychosocial point of view, there was an increased level of emotion expressed within the family with a hyperprotective mother (working in the justice domain), an absent father in the family relations, this being a predictive factor of decompensations with negative symptomatology of the disease.

On the background of the personality disorder and on the basis of these psychological premises augmented by psychotraumatic events (the early death of the patient's aunt), the disease began to emerge through a first psychotic episode.

From the history of the disease, we placed the onset of the psychiatric illness in 2004, in the context of tensioned relationships within the family and amid a schizoid type personality disorder, the patient being hospitalized for a behavioral symptomatology with adaptive disorder, social isolation, suspiciousness, aggressive outbursts, bizarre behavior with a dysphoric mood, lack of integration with family and friends, antisocial reactions (institutional conflicts). The patient was treated with Aripiprazole 10mg, Valproate 500mg, Duloxetine 60mg, with partial remission of symptoms.

In April 2013, the patient was admitted to Clinic II Psychiatry for a new decompensation (17.04.2013-21.05.2013) due to non-adherence to the medical treatment. In the hospital the patient's treatment was initiated with Olanzapine 10mg with favorable response, remission of positive symptoms and behavioral improvement. Upon discharge, depot treatment with Olanzapine 300mg 1fl is initiated and repeated at 2 week intervals.

Psychiatric exam: Patient with tense, suspicious pantomime, anxious and avoidant look, aprosodia, intrapsychic tension, psychomotor restlessness. Psycho-verbal contact is difficult due to marked suspiciousness, unusual perceptual phenomena, voluntary hypoprosexia with difficulties in concentration, sectoral hyperprosexia centered on delusional-hallucinatory themes, significant decrease in concentration capacity.

The patient's thinking was partially coherent with ideo-verbal rhythm and flux of slightly diminished intensity, with disorganized speech and lax logical associations with incoherence in discussion (ample divagations). Divergent, circumstantial speech, focused on the description of the unsystematic delusional idea of persecution, influence, prejudice, pursuit, monitoring, suspicion, interpretation, tendency to dissimulation, decrease of emotional resonance with ideo-affective dissociation, disorganized behavior, diminishment of volitional force, apathy, anhedonia, episodic heteroagresiveness, socio-professional and familial disconnection.

Somatic examination revealed a patient with normal weight and no other pathological changes.

Psychological exam: Intrapsychic dissociation of predominantly paranoid aspect and primary affectivity with obvious decrease in personality level; insufficient psychological pulsion due to the lack of dynamic-energetic support because of non-activity, interpretative idea of relationship with primary aspect, distortion of the communication system with bizarre and overly complicated speech, without loss of association or incoherence; inappropriate interpersonal relationships and increased suspiciousness; hypersensitivity to real criticism, affective detachment with arbitrary determination and unpredictability; negative behavior and inertia through attitudes of passivity and automatism; movements of mannerism with emphasis on expressivity and gestures, artificial configurative character, repetitive, attitudinal or gestural conducts with autistic behavior. Koch's Baum test was used for this psychological examination in a semi-structured clinical interview.

Paraclinical investigation revealed: no changes in full blood count or metabolism data.

## Discussion

The particularities of the case are premorbid personality, contorted family environment, ambiguous familial signals and behavioral debut.

Several types of antipsychotics were administered to the patient over a period of 14 years, and there were periods of discontinuation of treatment.

The discontinuation was followed by relapses and the need to re-initiate treatment. In this way, the premise of depot medication is taken into consideration in order to ensure that the treatment is administered thus increasing its efficacy.

The switch from oral medication to classic medication was performed in the clinic requiring medical supervision, reanalysis of the metabolic profile through biochemical and cardiologic tests (EKG) as well as imagistic tests to highlight organic brain damage.

The choice of Olanzapinum 300mg every 2 weeks depot medication was optimal regarding the patient's response and recovery in the socio-familial relational environment. This objective argumentation is supported by the Koch Baum psychological test repeated by the clinical psychologist.

The case presented puts into question the patient's partial compliance with oral therapy, thus justifying the argument for using single-injection depot medication once or twice a month being in accordance with other studies [10].

Based on the Diagnostic and Statistical Manual of Mental Disorders (DSM V) classification [11], the diagnosis is sustained:

More than two of the A criteria are present such as: delusions, hallucinations, disorganized speech, negative symptoms

- The patient is divorced, medically retired from 2014

- Lives with her mother in an urban environment with parental supervision and financial help.

Axis V-Global Assessment of Functioning (GAF)=34 at admittance (04.06.2014) severe symptoms, severe difficulties in social and professional functioning.

## Conclusions

- The benefit of depot antipsychotic is represented by the absence of weight gain, the lack of oversedation, the support in quality of life by diminishing the side effects, by improving the socio-familial relational system, the lack of augmentation of the antidepressant and hypnic medication.

- The use of depot medication has the benefit of a better cost-effectiveness ratio because it reduced the number of acute episodes and restored the socio-relational integration of the patient

- In the treatment and patient supervision, the beneficial results were obtained by the interdisciplinary collaboration between psychologists, psychiatrists, laboratory and functional exploration teams.

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*Corresponding Author: George-Ștefan Bădescu, Department of Psychiatry, Neuropsychiatry Hospital Craiova, e-mail: b\_stefan06@yahoo.com*