PSI LOGOS

Caso Clínico / *Case Report*

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Clinical Challenges in the Treatment of Post-Stroke Psychosis: A Case Report

Desafios na Abordagem Terapêutica da Psicose após Acidente Vascular Cerebral: Relato de Um Caso Clínico

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ABSTRACT

Background: Nearly 5% of stroke patients present psychotic symptoms but there are no specific guidelines for their management and treatment.

Aims: To report the therapeutic approach of a case of post-stroke psychosis, which required several adjustments due to symptom resistance and adverse effects.

Methods: We describe the clinical findings in detail with emphasis on the psychiatric symptoms and highlight some challenges in the psychopharmacological approach. Additionally, a review of the literature on the theme was performed.

Results and Conclusions: We report the case of a patient with post-stroke psychosis presenting as Othello Syndrome. Clinical stability was achieved with a combination of low dose antipsychotics and valproic acid.

Key-Words: Neuropsychiatry; Psychotic Disorders; Stroke; Psychopharmacology; Valproic Acid.

RESUMO

***Introdução**: Cerca de 5% dos doentes com acidente vascular cerebral (AVC) apresentam sintomas psicóticos, no entanto, não existem guidelines específicas para o seu tratamento.*

***Objetivos**: Relatar a abordagem terapêutica de um caso de psicose pós-AVC, que exigiu vários ajustes devido à resistência dos sintomas e aos efeitos adversos da medicação.*

***Métodos**: Descrevemos detalhadamente o quadro clínico com ênfase nos sintomas psiquiátricos e destacamos alguns desafios na abordagem psicofarmacológica. Adicionalmente, foi realizada uma revisão da literatura sobre o tema.*

***Resultados e Conclusões**: Relatamos o caso de um doente com psicose pós-AVC manifestada por Síndrome de Othello. A estabilidade clínica foi alcançada através da combinação de antipsicóticos em baixa dose com ácido valpróico.*

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INTRODUCTION

Psychiatric manifestations of stroke are common[1]. In a recent systematic review, delusions were estimated to be present in 4,86% and hallucinations in 5,05% of stroke patients[2]. Post-stroke psychosis seems to be predominantly associated with right hemisphere lesions, namely in frontal, temporal and parietal lobes and subcortical structures[2–6]. One study points the right inferior frontal gyrus and adjacent white matter as the main area involved[3]. Othello Syndrome, a delusion of infidelity, seems to be more common in patients with neurological disorders and has been reported following a stroke[2,4–7]. It may be associated with frontal lobe dysfunction, particularly of the right hemisphere, with consequent deficit in reality monitoring[4]. In these patients the pharmacological approach is difficult due to symptom resistance and adverse effects of medication[4,6]. There are no specific guidelines for the treatment of post-stroke psychosis. Antipsychotics are the most commonly prescribed medication, particularly haloperidol, risperidone, quetiapine and olanzapine[2]. We report a clinical case of post-stroke psychosis presenting as Othello Syndrome and highlight some challenges in the psychopharmacological approach.

CASE REPORT

A 79-year-old, right-handed man, with a medical history of arterial hypertension, dyslipidemia, atrial fibrillation and benign prostatic hypertrophy, suddenly presented left-sided hemiparesis and was admitted to the hospital. He was diagnosed with a middle cerebral artery stroke and thrombolysis was performed. Brain computerized tomography (CT) scan revealed an ischemic lesion comprising the right frontoparietal and insular cortex, the caudate and lenticular nucleus with hemorrhagic transformation. Twelve days later, he was discharged with residual left-sided hemiparesis, paresthesia and walking instability. He was prescribed with dabigatran 110mg twice a day, furosemide 20mg/day, pantoprazole 20mg/day, perindopril 4mg/day, rosuvastatin 20mg/day and trazodone 50mg/day. Outpatient physiotherapy was performed with benefit and he maintained autonomy in his daily activities.

One month after the stroke, he developed aggressive behavior related to the belief that his wife was being unfaithful and that his family was trying to harm him through the medication administered. He developed total insomnia and refused his usual medication, reason why he was conducted to the Emergency Department by his family. The neurological examination revealed sequelae, namely left hemiparesis and dysarthria. On Mental State Examination he was: alert, vigilant and lucid; oriented in time, place and person; attention sustained and without memory deficits; organized thinking; wife-centered jealousy and persecutory delusions; absence of insight for the psychopathology. He had no previous personal or family history of psychiatric disorder. An analytical evaluation was performed, including complete blood count, glycaemia, hepatic, renal and thyroid function, serum sodium and potassium, C-Reactive Protein, all within normal values, HIV serology and toxicology screen were negative. Brain CT-Scan revealed a sequela lesion compatible with right striatal, cortico-subcortical frontoinsular and ipsilateral corona radiata infarction. He was diagnosed

with an organic psychosis. The patient was admitted to the psychiatric ward. During hospitalization, periods of disorientation in time and deficits in recent memory were observed. Brain magnetic resonance imaging (MRI) revealed the lesion previously described on the CT-Scan and a new smaller lesion (less than one centimeter) with diffusion restriction that correlates with recent ischemic injury adjacent to the posterior aspect of the right lateral ventricle body (**Figure I**). Neuropsychological assessment demonstrated a deficit to comply with simple and semi-complex orders (Token Test); sustained attention was preserved (Trail Making Test); moderate to severe deficit in selective attention (Wechsler Adult Intelligence Scale - WAIS-III, coding) and work productivity due to psychomotor slowing; mild changes in visual memory (Wechsler Memory Scale - visual reproduction) and moderate in digit memory; moderate visual-constructive (cube and house figures) and visual-spatial deficit (Clock Drawing Test); altered verbal (proverb interpretation) and non-verbal abstraction capacity (WAIS-III- Matrix Reasoning); difficulty in modifying cognitive strategies and low cognitive flexibility (Wisconsin Card Sorting Test); mild deficit on verbal and graphomotor initiative.

He was first medicated with risperidone titrated up to 4mg/day. Quetiapine 100mg was added for insomnia, which needed to be increased to 200mg/day. Despite the therapeutic approach, two weeks later he maintained delusion of jealousy and there was a worsening of sialorrhea and dysarthria. Risperidone was reduced to 1mg/day and valproic acid 800mg/day was introduced with clear

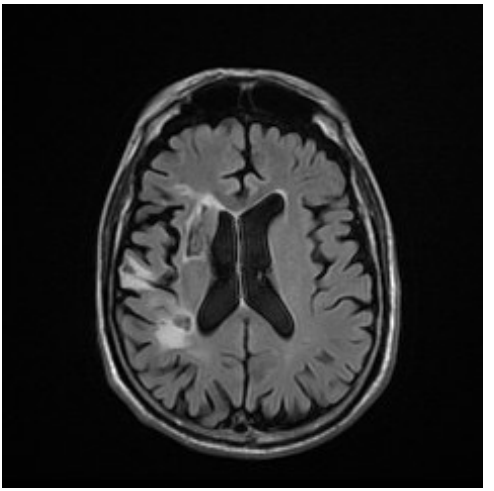

Figure I. T2-FLAIR axial MRI

improvement of the patient's behavior and a rapid remission of psychotic symptoms. He was released from hospital after one month of hospitalization, clinically improved, without psychotic symptoms. He presented partial insight for the pathology and accepted to take the prescribed medication. After discharge, he was followed in an outpatient psychiatry community team. Speech therapy sessions were performed with significant dysarthria improvement, as well as COGWEB cognitive stimulation program with a progressive improvement of cognitive deficits. Quetiapine was reduced to 50mg/day due to psychomotor slowing. Valproic acid was reduced to 500mg/day (serum valproate level 63,8 mg/L) due to thrombocytopenia with a subsequent increase platelet count while maintaining clinical stability. Two months later, an attempt was made to reduce risperidone but there was a resurgence of psychotic symptoms with a

lower dose, so the previous dose of 1mg/day was maintained.

DISCUSSION

This paper describes a patient with post-stroke psychosis. Psychiatric symptoms started one month after the patient was diagnosed with a middle cerebral artery stroke, so we propose a temporal relationship between them. The lesion location is also compatible with those described in the literature associated with Othello Syndrome and post-stroke psychosis[2,3]. Psychiatric symptoms led the patient to refuse to take his usual medication, including anticoagulant dabigatran which can explain the new ischemic lesion found during the second hospitalization. This reinforces the importance of identifying and treating psychiatric manifestations in post-stroke patients, as they may imply a lower adherence to treatment.

Our patient presented neuropsychological dysfunction affecting multiple domains. A recent study has shown that the frequency of neuropsychiatric symptoms seems to be related with the level of cognitive impairment[8].

We highlight some challenges in the psychopharmacological approach, which required several therapeutic adjustments until clinical stability was achieved. Two antipsychotics, risperidone and quetiapine, were used but they were not effective in the treatment of psychotic symptoms on their own. Remission of psychotic symptoms only occurred after the introduction of valproic acid. On follow up, he maintained clinical stability with a combination of low dose antipsychotics risperidone 1mg/day and quetiapine 50mg/day with valproic acid 500mg/day.

In the current literature there are no therapeutic guidelines for the treatment of post-stroke psychosis and most case reports published do not mention the therapeutic doses used. Antipsychotics are the most commonly used drugs; however, they may lead to worsening of motor deficits and are not always effective in controlling symptoms.

Valproic acid has a membrane stabilizer mechanism of action. In animal and cellular models, it has been linked to neuroprotective effects through anti-apoptotic and anti-inflammatory activity as well as upregulation of the expression of neurotrophins (including BDNF - Brain-derived neurotrophic factor)[9]. In a case report of a patient presenting a post-stroke manic episode with psychotic symptoms, valproic acid (1000mg/day) and risperidone (2mg/day) were started, with clinical benefit[10]. In a case series of post-stroke psychosis resistant to treatment, anticonvulsant medications have been reported to be useful, as there seemed to exist a relationship between epileptic seizures and psychotic symptoms[11]. In this clinical case an electroencephalogram was not performed as there were no observable clinical signs suggestive of epileptic seizures.

We suggest a role for valproic acid, even at low doses, in the treatment of psychotic symptoms of patients with post-stroke psychosis. We emphasize the importance of multidisciplinary non-psychopharmacological intervention, namely cognitive stimulation and speech therapy, for the improvement of cognitive deficits and quality of life of these patients.

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Conflicting Interests

The authors have declared no competing interests exist.

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