

Case Report

Electro Convulsive Therapy in Psychiatric Manifestations in Wilson's Disease

Parth Vaishnav, H. A. Gandhi

ABSTRACT

Wilson's disease occurs due to an inborn error of metabolism. Psychiatric symptoms are often the first manifestation of the disease and can obscure the diagnosis. There are five neuropsychiatric symptoms clusters established for Wilson's disease patients: Behavior and/or personality disorders, mood disorders, cognitive deficits, psychotic manifestations, and others. The frequency with which psychiatric manifestations appears in Wilson's disease remains vague. However, whenever they occur, they need to be correctly identified and treated. Though encouraging results have been obtained in controlling psychiatric manifestations of Wilson's with psychotropic medications, some sub-group of patients fail to respond to any therapy. We aim at finding options for controlling psychosis in these patients with electro convulsive therapy (ECT). A patient exhibiting rare neuropsychiatric manifestations of Wilson's and who is not responding to psychotropic medication was considered for ECT. Considerable control over psychiatric manifestations with ECT was observed and later treated with maintenance ECTs for relapse control.

Key words: *Electro convulsive therapy, neuropsychiatry, Wilson's disease*

INTRODUCTION

Wilson's disease bears the name of the British physician Samuel Alexander Kinnier Wilson (1878-1937), a neurologist who described the condition, including the pathological changes in the brain and liver, in 1912.^[1] Wilson's disease or hepatolenticular degeneration is an autosomal recessive genetic disorder due to mutations in the Wilson disease protein (ATP7B) gene, due to which copper accumulates in tissues.^[2] It manifests as neurological or psychiatric symptoms and liver disease.^[3] The neuropsychiatric manifestations in

Wilson's disease include behavior and/or personality disorders, mood disorders, cognitive deficits, and psychotic manifestations.^[4,5]

In the brain, most copper is deposited in the basal ganglia, particularly in the putamen and globus pallidus.^[6] Damage to these areas, again by Fenton chemistry, produces the neuropsychiatric symptoms seen in Wilson's disease. About 40% of all patients first present with liver abnormalities, 40% with neurological abnormalities, and 20% with psychiatric abnormalities.^[7] Two-third of all patients may have psychiatric symptoms as first presentation and 10-20% of patients seek psychiatric treatment before the diagnosis of Wilson's disease.^[8]

The severity of psychiatric symptoms correlates more strongly with the extent of neurological findings than to the liver disease, providing evidence that the psychiatric symptom reflect brain damage rather than a psychological reaction to the severity of the illness.^[9]

Access this article online	
Website: www.ijpm.info	Quick Response Code 
DOI: 10.4103/0253-7176.116257	

Department of Psychiatry, Sheth V S General Hospital, Ellis Bridge, Ahmedabad, Gujarat, India

Address for correspondence: Dr. Parth Vaishnav

Department of Psychiatry, Sheth Vadilal Sarabhai General Hospital, Ellis Bridge, Ahmedabad - 380 006, Gujarat, India.

E-mail: drparthvaishnav@gmail.com

CASE REPORT

A Hindu male patient aged 22 years diagnosed with Wilson's disease attended our psychiatry out patient department (OPD) with chief complains of wandering behavior from home multiple times since past 6 months, inappropriate giggling, muttering to self, poor self-care, social withdrawal, and emotional blunting. The patient had occasional anger outbursts with irritability and beating parents whenever he was asked to take proper self-care or eat food. Over and above these psychiatric symptoms, the patient had severe extra pyramidal symptoms like drooling of saliva, rigidity in muscles of bilateral upper limbs, festinate gait, and masking of face. There was history of discontinuation to the prescribed doses of penicillamine 8 months ago, i.e., 2 months before the initiation of the current symptoms. Following this, psychotic symptoms were the first to develop, followed by fever, severe anemia, and extrapyramidal symptoms (without antipsychotic medication) about 1 month ago.

Investigations of haematology in current exacerbation depicted Hb of 10.9 g/dl, platelet count of 1,06,000/mm³, WBC of 2840/mm³, serum bilirubin of 1.5 mg/dl, serum ceruloplasmin of 3.60 mg/dl (20-60) mg/dl, and serum copper of 68 mcg/dl (80-155), 24-hour urine copper excretion of 95 (20-50) mcg/dl. On ophthalmologic examination, bilateral Kayser–Fleischer rings were visible, MRI findings showed hypo echoic regions in basal ganglia and the ultrasonography of abdomen showed hepato-splenomegaly.

Patient was currently on zinc acetate 250 mg/d, penicillamine 600 mg/d, olanzapine 5 mg/d, and trihexyphenidyl 4 mg/d. In the current episode, the neurologist had tried to treat the psychotic symptoms with 6 mg of risperidone with 4 mg of trihexyphenidyl; however, the patient had an episode of severe neck dystonia after which he was shifted to 10 mg of olanzapine, which was reduced to 5 mg after disturbances experienced by patient due to the extrapyramidal symptoms.

The patient was diagnosed with Wilson's disease 4 years ago after confirmation by laboratory investigations and ophthalmological examination by a neurologist and treatment with penicillamine. The first symptoms to develop were drooling of saliva with rigidity of limbs and withdrawn behavior and wandering aimlessly. The patient was managed by neurophysician with penicillamine 500 mg/d in divided doses and control over both neurological and psychiatric symptoms was obtained by it. No psychiatric liaison was required.

The dilemma was that, presently, there was exacerbation of psychiatric symptoms; however, poor control

by antipsychotic medications and worsening of extrapyramidal symptoms on olanzapine even at low dose of 5 mg/day with 4 mg of trihexyphenidyl. It was decided to treat the current psychiatric manifestations with electro convulsive therapy (ECT) and discontinue all antipsychotics. He was referred to the medical side and a high-risk consent from the family members was obtained to start ECT in the patient. A course of 6 ECT was planned and administered in the patient. The patient showed 25-30-sec seizure response in all ECT sessions which were delivered as per the calculated dose of ECT, administered thrice weekly on alternate days. No prolonged seizure or post-ictal confusion as mentioned in previous case reports was observed. Later, the patient was given 4 ECTS, twice weekly, and 4 ECT once a week, as maintenance ECTs and, with complete resolution of psychiatric manifestations, ECTs were discontinued without starting any antipsychotic medication. The patient was continued on penicillamine and zinc for control of neurologic and other manifestations of Wilson's disease.

It has been reported that, in Wilson's disease, the psychiatric manifestations may precede neurological signs in the early stages of Wilson's disease. This patient had consulted us after being a defaulter in the treatment of Wilson's disease from a neurologist. The current scenario had more of psychiatric problems than neurologic. The visible extrapyramidal symptoms were worsened with antipsychotics. However, by discontinuing the antipsychotic treatment, there was an exacerbation of the neuropsychiatric symptoms. With references to case reports from previous data, it was decided to start a course of 6 ECTs in the patient, which is a routine course of therapy followed in our hospital for psychotic patients. We also went a step ahead to continue with the maintenance ECTs in this patient and preferred not to stabilize him on any oral antipsychotic drug due to poor outcomes in the past 6 months. The patient was followed-up regularly and, after omission of ECTs and continuing regular treatment from neurologist, the patient showed no active symptoms either from psychiatric side or any other domain of Wilson's disease. ECT in control of acute psychosis of Wilson's disease is an encouraging option, especially in patients who have extrapyramidal symptoms along with psychosis as neuropsychiatric symptoms of Wilson's disease. This adds to the long list of managing psychosis of non-psychiatric origin by ECT: intractable epilepsy, multiple sclerosis, parkinson's disease, dementia, neuroleptic malignant syndrome, space occupying lesions, movement disorder, normal pressure hydrocephalus, and encourages us to increase the use of ECT and refrain from any hesitation and stigma related to this time tested therapy.^[10-14] Treating

psychosis of organic origin with ECTs is a safer and better option whenever there is poor response to antipsychotics.

REFERENCES

1. Compston A. Progressive lenticular degeneration. A familial nervous disease associated with cirrhosis of the liver, by S. A. Kinnier Wilson, (From the National Hospital, and the Laboratory of the National Hospital, Queen Square, London) *Brain* 1912;34:295-509. *Brain* 2009;132(Pt 8):1997-2001.
2. Wilson SAK. Progressive lenticular degeneration: A familial nervous disease associated with cirrhosis of the liver. *Brain* 1912;34:20-509.
3. Bearn AG. A genetical analysis of thirty families with Wilson's disease (hepatolenticular degeneration). *Ann Hum Genet* 1960;24:33-43.
4. Akil M, Brewer GJ. Psychiatric and behavioral abnormalities in Wilson's disease. *Adv Neurol* 1995;65:171-8.
5. Dening TR, Berrios GE. Wilson's disease. Psychiatric symptoms in 195 cases. *Arch Gen Psychiatry* 1989;46:1126-34.
6. Brewer GJ, Yuzbasiyan-Gurkan V. Wilson disease. *Medicine (Baltimore)* 1992;71:139-64.
7. Dening TR, Berrios GE. Wilson's disease: A prospective study of psychopathology in 31 cases. *Br J Psychiatry* 1989;155:206-13.
8. Dening TR. Psychiatric aspects of Wilson's disease. *Br J Psychiatry* 1985;147:677-82.
9. Walshe JM, Yealland M. Wilson's disease: The problem of delayed diagnosis. *J Neurol Neurosurg Psychiatry* 1992;55:692-6.
10. Pridmore S, Lowrie A, Holmes G, Pollard C. ECT in Parkinson's disease: Neuropsychological response. *Convuls Ther* 1996;12:257-9.
11. Yassa R, Hoffman H, Canakis M. The effect of electroconvulsive therapy on tardive dyskinesia: A prospective study. *Convuls Ther* 1990;6:194-8.
12. Barclay CL, Duff J, Sandor P, Lang AE. Limited usefulness of electroconvulsive therapy in progressive supranuclear palsy. *Neurology* 1996;46:1284-6.
13. Ruxin RJ, Ruedrich S. ECT in combined multiple system atrophy and major depression. *Convuls Ther* 1994;10:298-300.
14. Hooten WM, Melin G, Richardson JW. Response of the Parkinsonian symptoms of multiple system atrophy to ECT. *Am J Psychiatry* 1998;155:1628.

How to cite this article: Vaishnav P, Gandhi HA. Electro convulsive therapy in psychiatric manifestations in *Wilson's disease*. *Indian J Psychol Med* 2013;35:206-8.

Source of Support: Nil, **Conflict of Interest:** None.