Major depression caused by Wilson's disease

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Wilson's disease (WD) is an illness caused by the body's inability to release copper from the liver.[1-5] It is caused by an autosomal recessive genetic alteration, located in chromosome 13,[1] and has an incidence of approximately 1 in every 30,000-40,000 births.[5] It generally manifests between the ages of 11 and 25 years, with hepatic symptoms, although other organs may be affected.[1] In 10% of cases, psychiatric disorders manifest concomitantly with the first symptoms and signs,[3,5] although they usually tend to appear later, and may present as anxiety, mood disorders, or full-blown psychosis.[5] The diagnosis can be made by a thorough history and positive liver biopsy. Low serum levels of ceruloplasmin and copper, with an increase of the free ion fraction in the bloodstream; elevated copper levels in a 24-hour urine sample; and the presence of Kayser-Fleisher rings in the cornea should prompt strong suspicion of WD.[4]

We report the case of a 31-year-old male patient who was previously diagnosed with his first major depressive episode during the last 6 months and was medicated with several antidepressants, at adequate dosages and for adequate lengths of time, with no satisfactory response. He developed psychotic symptoms and was prescribed paliperidone 6 mg/day as an add-on to escitalopram 20 mg/day. After the appearance of extrapyramidal symptoms (parkinsonism), biperiden was added to his regimen. At the time of first psychiatric examination at our service, he was still depressed. Voluntary and spontaneous attention were preserved, but he had difficulty speaking due to intense sialorrhea. On physical examination, blood pressure was 120/80 mmHg, the body mass index (BMI) was 21 kg/m^2, and the patient exhibited cogwheel rigidity and tremor at rest. Mirtazapine 30 mg/day was prescribed and paliperidone and escitalopram were discontinued. At 2-week follow-up, he was slightly improved, but had lost a further 3 kg. Magnetic resonance imaging of the brain showed a signal abnormality in the putamen and central part of the pons and diffuse enlargement of the subarachnoid space, inconsistent with the patient's age. A laboratory workup revealed normal renal and hepatic markers, ceruloplasmin 3.9 mg/dL (reference range, 22-58 mg/dL), 24-hour urine copper 5.4 μg (reference range, 3.0-5.0 μg), and serum copper 148.12 μg/dL (reference range, 60-140 μg/dL). Computed tomography of the abdomen showed signs of chronic liver disease with multiple hypodense nodules. A new neurological examination revealed facial diplegia, right hemilingual atrophy, muscle strength 4+/5+ in the upper and lower extremities, altered deep tendon reflexes (upper extremities 2+, patellar 1+, Achilles reflex absent), akinesia, loss of postural reflexes, and paretic gait.

Due to suspicion of WD, the patient was admitted for D-penicillamine therapy, which was titrated to a dose of 2 g/day after 10 weeks of hospitalization. He was discharged in stable clinical condition, although serious neurological sequelae remained. The antidepressant (mirtazapine 30 mg/day) was continued.

WD is a rare disease and can manifest with several central nervous system changes.[3,5] Thus, one should suspect this condition when there are signs in the medical history or physical examination to suggest it, as well as in cases of treatment-resistant bipolar disorder or recurrent major depression with neurologic symptoms. The prognosis of WD can be good with timely diagnosis; hence, it is imperative that it be considered early in the differential.[1,5]

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Disclosure

The authors report no conflicts of interest.

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