

Modafinil-induced psychosis in a patient with attention deficit hyperactivity disorder

Australasian Psychiatry

1

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DOI: 10.1177/1039856220936630

journals.sagepub.com/home/apy



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Abstract

Modafinil is a wakefulness-promoting agent that is known to be used off-label as a cognitive enhancer and for the treatment of attention deficit hyperactivity disorder (ADHD).¹ There are increasing case reports of Modafinil-induced psychosis; however, this is the first to report a patient with ADHD to develop psychosis from Modafinil use.

Keywords: Modafinil, psychosis, attention deficit hyperactivity disorder

A 48-year-old male with a diagnosis of ADHD was admitted to an inpatient psychiatric unit due to a 3-day history of psychotic symptoms in the context of high-dose Modafinil use, reporting to have taken 400–800 mg daily for 4 days. He ran out of his regular Dexamfetamine and substituted it for Modafinil obtained online, without prescription. He presented with paranoia, tangential and disorganised thought form, delusions of persecution and reference, disorganised behaviour, significant psychomotor agitation and insomnia/wakefulness. He denied hallucinations and there were no affective symptoms. Collateral history from the family verified the clinical impression/course.

The patient had a comorbid psychiatric diagnosis of major depressive disorder in remission, and medical conditions including gout and neuropathic pain. His regular medications at admission were Dexamfetamine 40 mg, Allopurinol 100 mg and Mirtazapine 45 mg daily. He also used regular illicit Cannabidiol (CBD) for his neuropathic pain, but ceased this 1 week prior. There was no past history or family history of psychosis or mania.

Standard first episode psychosis investigations were mostly within normal limits, with some exceptions. This included an elevated Creatine Kinase (likely due to psychomotor agitation and need for physical restraint), a mild leukocytosis with elevated neutrophils and monocytes that resolved quickly (suggesting an incidental finding), and a positive urine drug screen for Cannabinoids (likely due to Tetrahydrocannabinol [THC] contamination of illicit CBD²).

During psychiatric admission, Dexamfetamine was withheld; he was initially treated with Olanzapine 20 mg daily for 9 days, and then changed to Risperidone 2 mg daily due to concern for Olanzapine's long-term metabolic side

effects. After 12 days of treatment with antipsychotic medication, he had full resolution of all psychotic symptoms and was subsequently discharged.

This case has evident confounders, including the quality/source of Modafinil used and his comorbid illicit CBD use. Regarding medication history, the patient had been using CBD and high-dose Dexamfetamine (up to 80 mg daily) for 4 years prior to presentation and had not developed psychotic symptoms. Yet within 1 day of high-dose Modafinil use, he developed psychosis. Though the quality of Modafinil cannot be verified, this case still demonstrates that clinicians should be aware of substance-induced psychosis even if the patient had already trialled high-dose psychostimulants prior and not become psychotic.

Disclosure

The author reports no conflict of interest. The author alone is responsible for the content and writing of the paper.

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