Letter to the editor

Drug-induced psychotic disorder after administration of *Vitex agnus castus* (chasteberry) medication to treat premenstrual syndrome: a case report

Firoozeh Farshchian[1]
https://orcid.org/0000-0002-3982-802X

Omran Davarinejad[1,2]
https://orcid.org/0000-0002-4267-7867

Serge Brand[2,3,4,5]
https://orcid.org/0000-0003-2175-2765

[1] *Department of Psychiatry, Kermanshah University of Medical Sciences, Kermanshah, Iran.*
[2] *Substance abuse Prevention Research Center, Health institute, Kermanshah University of Medical Sciences, Kermanshah, Iran.*
[3] *Sleep Disorders Research Centre, Kermanshah University of Medical Sciences, Kermanshah, Iran.*
[4] *University of Basel, Psychiatric Clinics, Center for Affective, Stress and Sleep Disorders, Basel, Switzerland.*
[5] *University of Basel, Department of Sport, Exercise and Health, Division of Sport Science and Psychosocial Health, Basel, Switzerland.*

Received: 1/18/2019 – **Accepted:** 2/4/2019
DOI: 10.1590/0101-60830000000198

Farshchian F et al. / Arch Clin Psychiatry. 2019;46(3):80

Following the DSM-5[1] a drug-induced psychotic disorder (DIPD) occurs when there is clear evidence that the psychotic disorder is causally linked to the intake of a psychosis-inducing medication. Symptoms of psychosis occur quickly after drug-intake and disappear, once the medication is metabolized. DIPD have a good prognosis and do not require a long-term treatment with antipsychotics.

A 47 years old woman, married and illiterate from Eslamabad-e Gharb City (Iran), complained about severe restlessness, irritability and mood swings in pre- and post-menstruation cycles. She was referred to the hospital, where low doses of an SSRI and a benzodiazepine were administered. During the first five days of hospitalization, no signs of psychosis (delusion, hallucination, disturbance in reality testing or formal thought disorders) were observed. Further, to exclude gynecological issues related to severe pre- and post-menstrual syndromes, the patient underwent ultrasonography of the uterus and ovaries, where simple bilateral ovarian cysts were observed, which, however, were very unlikely to be causally associated to severe pre- and post-menstrual syndromes. Next, *Vitex agnus castus* (VAC, Femodin®; chasteberry) was prescribed (20 mg/d in tablets). VAC is the only evidence-based herbal medication for pre-menstrual syndromes[2,3]. Further, Cerqueira *et al.*[4] described its efficacy in their systematic review, while Verkaik *et al.*[5] were more critical in their meta-analysis and systematic review. 24h after VAC intake, the patient clearly showed formal thought disorders, auditory and visual hallucinations, disturbances in reality testing, disorganized behavior and speech; negative symptoms were not observed. Administration of VAC was discontinued, and within 48h symptoms of psychosis fully disappeared.

As often observed in the successful application of herbal pharmaca, also for VAC, the biological mechanism to explain the therapeutic effects are not fully understood. Following Tamagno[6], it is assumed that dopaminergic diterpenes isolated from VAC extracts impacts in vitro dopaminergic activity[7]. Further, the influence of VAC on hyperprolactinemia has been discussed and hypothesized[8]. More specifically, VAC appears to exert its effects through lowering the secretion of prolactin from the pituitary gland mediated by the effect on dopamine receptors D2. Further, VAC extract inhibits the release of FSH and stimulates the release of LH, leading to an increase in the level of progesterone and subsequently deteriorates estrogen levels. Next, as VAC has dopaminergic effects, VAC can improve physical disorders and mental sleep disorders. Therefore, it is claimed that all drugs with dopaminergic effects, the downregulation of inhibitory GABA-ergic neurons and following hyperactivity of dopaminergic neurons can induce symptoms of psychosis.

To summarize, while the quality of the data does not allow to understand, why VAC had a psychosis-inducing effect exactly on this patient, discontinuation with VAC led to a quick and stable state of normal mood, perception and behavior.

References

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders 5th edition: DSM 5. Arlington, VA: American Psychiatric Association; 2013.
2. Ryu A, Kim TH. Premenstrual syndrome: A mini review. Maturitas. 2015;82(4):436-40.
3. van Die MD, Burger HG, Teede HJ, Bone KM. Vitex agnus-castus extracts for female reproductive disorders: a systematic review of clinical trials. Planta Med. 2013;79(7):562-75.
4. Cerqueira RO, Frey BN, Leclerc E, Brietzke E. Vitex agnus castus for pre-menstrual syndrome and premenstrual dysphoric disorder: a systematic review. Arch Womens Ment Health. 2017;20(6):713-9.
5. Verkaik S, Kamperman AM, van Westrhenen R, Schulte PFJ. The treatment of premenstrual syndrome with preparations of Vitex agnus castus: a systematic review and meta-analysis. Am J Obstet Gynecol. 2017;217(2):150-66.
6. Tamagno G. Are changes of prolactin levels the effectors of vitex agnus castus beneficial effects on the pre-menstrual syndrome? Maturitas. 2009;63(4):369.
7. Heskes AM, Sundram TCM, Boughton BA, Jensen NB, Hansen NL, Crocoll C, et al. Biosynthesis of bioactive diterpenoids in the medicinal plant Vitex agnus-castus. Plant J. 2018;93(5):943-58.
8. Tamagno G, Burlacu MC, Daly AF, Beckers A. Vitex agnus castus might enrich the pharmacological armamentarium for medical treatment of prolactinoma. Eur J Obstet Gynecol Reprod Biol. 2007;135(1):139-40.

Address for correspondence: Omran Davarinejad MD. Department of Psychiatry, Substance abuse Prevention Research Center,Health institute, Kermanshah University of Medical Sciences, Kermanshah, Iran. E-mail: odavarinejad@gmail.com