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CASE REPORT

Major Depression and Panic Disorder Associated with Implanon Implant: A Case Report

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Abstract: This report presents a case study of a patient who experienced depression and panic disorder symptoms associated with the use of Implanon, a contraceptive implant. This is a rare case of related prevalence data. The purpose of this report is to explore the potential relationship between Implanon and the development of these psychiatric conditions. The findings suggest a possible link between Implanon and the onset or exacerbation of depression and panic disorder symptoms. Further research is warranted to investigate the underlying mechanisms and determine the prevalence of such adverse effects.

Keywords: major depression, pain disorder, implanon

Introduction

Implanon is a long-acting reversible contraceptive (LARC) that is widely used and contains etonogestrel, a synthetic progestogen.[1] Although Implanon is generally considered to be safe and effective, it has been reported to cause adverse mental health effects.[2] This case study aims to highlight the possible association of Implanon with depression and panic disorder.

Case Presentation

The patient, a woman aged 26, consulted her physician because of depressive symptoms and panic attacks, which occurred approximately two years after the implantation of Implanon. She did not have any psychiatric problems before Implanon. The symptoms included persisting sadness, loss of interest in activities, feeling worthless, trembling, sweating, excessive worrying, palpitations, nausea, chest pain, hot flushes, headaches, dizziness, numbness, tingling, shortness of breath, and fear of death. No underlying medical conditions contributing to the symptoms were found in the patient's medical history, including laboratory and imaging results. Biopsychosocial formulation has been done and we did not identify any biological or psychosocial factors that behave as etiology, the patient was working in a health facility as a health provider, without any family problems or history of recent stressful life events. The contraceptive implant was removed on the advice of the psychiatrist after recognizing the possible link between Implanon and the patient's symptoms. Combined psychotherapy and pharmacotherapy, including selective serotonin reuptake inhibitors (SSRIs) and cognitive behavioral therapy, was initiated. The patient reported a gradual improvement in depressive symptoms and a reduction in panic attacks over the course of seven weeks. The antidepressant was stopped at the end of the first week because the symptoms had improved, and the patient avoided the therapy because she felt fine.

Discussion

This report discusses potential mechanisms by which hormonal contraceptives like Implanon might influence mood and anxiety. It has been reported that Implanon may be associated with depression and anxiety.[2] Several hypotheses have been proposed, although the exact mechanism is not yet fully understood. Progestational agents, such as etonogestrel in

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Implanon, may affect neurotransmitter pathways such as serotonin, which is important in mood regulation.[3] The pathophysiology of depression and anxiety disorders has been linked to disruption of the serotonin system.[4] In addition, Implanon may have an effect on the hypothalamic-pituitary-adrenal (HPA) axis, which is the regulator of the stress response. The development of anxiety and mood disorders may be associated with dysregulation of the HPA axis.[5] The hormonal effects of the implant may also affect neuroendocrine pathways and potentially exacerbate psychiatric symptoms.[6] The highest antidepressant use had been found in women using the medroxyprogesterone-only, followed by etonogestrel-only, levonorgestrel-only and ethinylestradiol/norelgestromin formulations.[7] Desogestrel, which is the prodrug of etonogestrel, has been associated with the development of severe depression and panic attacks in women who had an improvement in their symptoms after discontinuation of its use.[8] The use of the hormonal contraceptive method was associated with the initiation of an antidepressant treatment.[9] There is evidence of a group of women who are particularly vulnerable to mood changes as their hormones fluctuate.[10] Affected women have normal peripheral concentrations of reproductive hormones. However, their neurophysiology appears to be susceptible to the mood-destabilizing effects of fluctuations in gonadal steroid concentrations.[11] Furthermore, the existence of alternative insertion sites had been found to be useful to patients with psychiatric disorders and low compliance, hence the implanon is an effective and safe contraceptive device, not easily accessible by the user.[12]

This study has several limitations. First, the single patient's experience limits the generalization of the findings. It is important to keep in mind that individual responses to contraceptives can vary significantly. Second, without a control group of people not using Implanon, it is challenging to determine the link between Implanon and observed psychiatric symptoms. Finally, various confounding variables, such as personal and environmental factors, may contribute to the development of depressive and panic symptoms. These factors were not explored or controlled in this case report.

Conclusion

The possible association between Implanon and the development or worsening of depression and panic disorder symptoms is highlighted by this case study. Healthcare professionals should be aware of the potential psychiatric risks associated with the use of Implanon and should be vigilant in assessing the mental health status of patients using Implanon. Furthermore, it can be useful in some cases especially in patients with psychiatric disorders and low compliance, in consideration of the easy insertion, the safety of the device and the generally low rate of disturbances during its use. To guide clinical decision-making and improve patient safety, further research is needed to elucidate the underlying mechanisms and determine the prevalence of these adverse effects.

Abbreviations

HPA, hypothalamic-pituitary-adrenal; LARC, long-acting reversible contraceptive; SSRIs, selective serotonin reuptake inhibitors.

Data Sharing Statement

All relevant data supporting the conclusions of this article are included within the article.

Ethical Considerations

The need for institutional ethics approval for this case report was waived. Written informed consent was obtained from the patient for publication of this case report.

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Disclosure

The author reports no conflict of interest in this work.

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