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Finasteride-Induced Neuropsychiatric Reactions

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Abstract

Finasteride, widely prescribed for androgenetic alopecia and increasingly obtained online, has been associated with persistent neuropsychiatric adverse effects, including depression, anxiety, cognitive impairment, and suicidality. This Mini Review examines the strength of evidence supporting a causal relationship between finasteride and these reactions, evaluates the drug's benefit–risk balance in cosmetic use, and discusses implications for clinical practice and regulation. Evidence from experimental, clinical, and epidemiological studies across multiple countries fulfills key Bradford–Hill criteria for causality, including temporality, consistency, biological plausibility, and reversibility, with reports of persistent symptoms after drug discontinuation. Mechanistically, inhibition of 5α-reductase reduces neurosteroid synthesis—particularly allopregnanolone—affecting mood regulation, neurogenesis, and neuroinflammatory pathways. Regulatory agencies have responded by updating safety warnings, and some countries now require formal informed consent prior to prescription.

Although finasteride demonstrates short-term efficacy for hair loss, evidence for long-term benefit is limited, while meta-analytic data suggest an approximately 50% relative increase in depression risk. Given the baseline prevalence of depression, this translates into a clinically meaningful absolute risk, with rare but grave outcomes including suicide. Because alopecia is a cosmetic condition with alternative management options, application of the precautionary principle is warranted. Clinicians should ensure comprehensive disclosure of potential neuropsychiatric harms, screen for prior mood disorders, and engage in genuine shared decision-making. In light of persistent adverse effects, limited long-term efficacy data, and broader public health costs, avoidance of finasteride for hair loss and strengthened regulatory oversight should be seriously considered.

This review is dedicated to the memory of a healthy person who started taking finasteride several years ago, "just" to improve his hair. Within a week, he developed severe neuropsychiatric symptoms that did not abate after stopping the drug. Treatment attempts by the best specialists did not help, and a few months later, he died by suicide. This case motivated a comprehensive analysis, the result of several years of careful review of the literature.[1]

Introduction

Finasteride is widely used for androgenetic alopecia (AGA) and is increasingly purchased online. Many dermatologists are unaware of severe neuropsychiatric reactions, including depression and suicidality, that may persist after the drug is discontinued as post-finasteride syndrome. The purpose of this Mini Review is to discuss how to handle this information in clinical practice.

Evidence of Finasteride's Effects on Mental Health

As recently published in a comprehensive review of the literature,[1]

the evidence that finasteride can induce neuropsychiatric reactions is strong: studies from multiple countries, using a variety of research designs, have confirmed earlier clinical and experimental findings.[1,2] Bradford-Hill criteria for causality are met: temporality and reversibility (including rechallenge), consistency and replicability of results across studies, high statistical significance, and biological plausibility.[1]

Animal and human studies have demonstrated that finasteride, by inhibiting 5α-reductase, decreases the production of neurosteroids, which are brain hormones that influence mood.[3-5] The decline in neurosteroid levels, especially allopregnanolone, is believed to contribute to the neuropsychiatric side effects linked to finasteride use, such as depression, anxiety, and cognitive impairment.[6,7] Neuropsychiatric reactions, which often persist long after stopping the medication, can sometimes be severe enough to result in suicide. The long-lasting effects of finasteride may be mediated by factors like hippocampal neurogenesis, neuroinflammation, and genetic alterations.[8,9]

Thus, experimental and epidemiological studies show that finasteride can cause severe neuropsychiatric reactions, including depression, anxiety, and suicidality, even after stopping the drug, and the evidence for causality appears strong.[1] The FDA required the addition of suicidal ideation and behavior to the adverse reactions listed on the label for Propecia (finasteride 1 mg) in June 2022. Last year, the European Medicines Agency (EMA) acknowledged that finasteride can cause depression and suicidal thoughts.[10] From mid-April 2026, the French National Agency for Medicines and Health Products Safety requires signed informed consent for every prescription of finasteride. These regulatory steps confirm that scientific evidence obligates practitioners to follow the precautionary principle—*first, do no harm*.[11]

Is there any Contradictory Evidence?

Experienced clinicians who prescribe finasteride often fail to recognize the issue:[12] suicide is rare, and few practitioners follow enough patients to encounter one.[2] Depressive symptoms, conversely, are so common that it's difficult to attribute them to a drug rather than to a life event (e.g., job or family crisis): patients are unlikely to ascribe a worsening mood to a cosmetic medicine, and clinicians unaware of this risk overlook the connection.[12] Only epidemiological studies can identify the problem, and this is what was found with finasteride, with quite consistency across studies, especially when prescribed for AGA.[1]

When finasteride is prescribed for prostate hyperplasia in older men, there are some conflicting studies: Some report an adverse effect on mood, and others do not.[1] Contradictory evidence may have influenced regulatory agencies' assessments and actions.

The post-finasteride syndrome has sometimes been attributed to a nocebo effect and patients' delusions induced by media coverage.[13] As previously discussed,[1,14] adverse events reporting is usually not artificially stimulated,[15], and suicide has not been reported from the nocebo effect.[16] Increased awareness about the effect of finasteride on mood appears to have uncovered a real problem.[1,14] While the EMA states that the benefits of finasteride outweigh its risks, the French drug regulatory authority categorically disagreed.[17] EMA's stance was published prior to our comprehensive review of the topic and of the issues at stake,[1,2] some of which are summarized in the section below.

Is Finasteride's Effectiveness Worth its Risks?

Finasteride has gained popularity among young people looking to improve their appearance,[18] often obtaining it online without a doctor's prescription.[19] Finasteride was shown to be effective for treating AGA, although, according to a systematic review,[20] most trials were small, short-term, industry-sponsored, and had moderate-quality evidence and possible publication bias. A recent Bayesian network meta-analysis seems to question its long-term effectiveness.[21] So its short-term efficacy is overshadowed by questionable long-term results and by serious side-effects.

How common are the mental side effects of finasteride? According to the literature,[1] the risk of experiencing depression appears to increase by about 50%. Since the baseline risk of depression in the general population is 10%-20%, this means that when using finasteride, an individual has an increased absolute risk of 5-10% of developing depression. It's unclear how often this adverse effect can last after stopping the drug, and experience shows that there is no effective treatment for these neuropsychiatric reactions. So, a cosmetic medication meant to improve quality of life can unexpectedly and sometimes permanently harm it.

Worse, depression significantly raises the risk of suicidality, from an absolute risk of about 1 in 10,000 or higher, especially for those with a history of mood disorder.[1] Someone might accept this risk, even though it exceeds the likelihood of death in a car crash in one year.[22] People who accept travel risks without much thought, as a reasonable trade-off for the convenience of commuting, may not be willing to accept a similar risk for a cosmetic medication that has safer alternatives.

To determine whether using Finasteride is worth the risks for an individual, an informed discussion of the benefits, risks, and alternatives can be helpful. The next paragraph explains why and how to engage in shared decision-making with informed consent. Of course, this becomes more challenging as finasteride is increasingly bought online.

Informed Consent

The importance of informed consent is illustrated by the following case. In his suicide note, the man this paper is dedicated to wrote: "This is a deadly and dangerous drug (...). Within a week of using the drug, I began to experience tremendous anxiety, completely unexplained. I stopped sleeping, lost some of my cognitive ability, and was confused and afraid (...). The doctor who prescribed the drug did not mention anything to me about its serious side effects. (...) The distribution of the drug must be stopped, and maybe I will save others."

An informed consent form has been proposed to help protect a patient's right to receive a self-enhancement drug while understanding its potentially severe side effects. Genuine shared decision-making, however, is unlikely to occur as long as most physicians remain unaware of the neuropsychiatric reactions to finasteride.[12] To better understand what should be discussed with a patient before prescribing finasteride, it is useful to examine the recently introduced informed consent form in France. The following lines are translated from the French document to be signed by both the prescribing physician and the patient.

My doctor offered me alternative options and advised me to take some time to consider before starting treatment.

I informed my doctor of my complete medical history, including physical and mental illnesses, particularly anxiety disorders and depression.

Reports have indicated that patients treated with finasteride 1 mg may experience sexual disorders such as erectile dysfunction, ejaculation problems, testicular pain, decreased libido, blood in the semen, male infertility, and poor sperm quality. These issues can also lead to mood changes and suicidal thoughts.

Psychiatric disorders such as anxiety, depressed mood, depression, suicidal thoughts, and suicides have been reported. Symptoms of depression may include persistent sadness, low mood, loss of interest and pleasure, difficulty concentrating and remembering, decreased energy, severe fatigue, and sleep disturbances.

The time it takes for side effects to appear during treatment with finasteride 1 mg varies from a few days to several years after starting, and their duration also differs among patients.

Some effects may last for many years or even indefinitely after treatment ends.

This is a thoughtful document, but, as is often the case with informed consent, it may be signed casually without a thorough discussion of risks and alternatives, as evidenced by persistent deficiencies in patient understanding and communication.[23,24]

Premorbid Mental Distress from Alopecia and Alternative Management Options

While not typically associated with depression, patients with AGA may experience body image concerns and low self-esteem,[25] for which psychotherapy, mindfulness-based stress reduction, and hypnotherapy may help.[26] While AGA may be linked to emotional distress, systematic reviews did not find that it causes depression.[25,27] This is another reason to avoid finasteride, as it can worsen mood and increase the risk of suicide.[1] Other non-drug treatments offer safer and potentially more effective options,[28,29] avoiding the risk of suicide.

Topical finasteride, not currently FDA-approved for AGA, is absorbed in small amounts, resulting in significant reductions in serum dihydrotestosterone[30,31] and reported systemic adverse effects, apparently less frequent than with oral finasteride.[32] Therefore, the safety of topical finasteride has not been established.

Conclusion: Public Health Harms and Regulation Failure

Finasteride-induced depression results in billions of dollars lost in productivity worldwide each year.[1] These external costs, borne by third parties who cannot mitigate them, represent a market failure that should be addressed through regulation. Finasteride for hair loss would probably not receive approval today, and its marketing should now be halted under the precautionary principle.[11] Meanwhile, doctors must inform patients about the drug's serious side effects. Depression may persist even after stopping finasteride, which can be resistant to treatment and may lead to suicide. To ensure patient safety, this risky medication should be avoided, and alternative treatments should be recommended.

Conflict of interest

none

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none

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