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Post-Finasteride Syndrome: A Disease Connected to a Hairloss Medication

Erectile dysfunction and impotence, depression and suicidal impulses: these are the symptoms of a rare disease that affects 3% of people taking finasteride

Finasteride is a drug used for the treatment of early states of androgenetic alopecia, in men between 18 and 41, and for the treatment and control of benign prostatic hyperplasia.

Technically, the medicine is an inhibitor of the enzyme 5-alpha reductase type II, which converts testosterone into dihydrotestosterone (DHT), an androgen that is responsible for the development of male genitalia, secondary sexual characteristics (growth, hair loss, lowering of the vocal tone, etc.) and sexual stimulation. Finasteride, by inhibiting this enzyme and preventing the transformation of testosterone, reduces DHT levels. Unfortunately, an increasing number of studies show that, in some cases, finasteride induces serious adverse effects, which may persist after treatment ceases, and may even be irreversible.

Initially marketed by the pharmaceutical company Merck Sharp & Dhome and now also available in generic form, finasteride was approved in the United States in 1992 to treat enlarged prostate (Proscar, finasteride 5mg), and in 1997 for alopecia androgenetic (Propecia, finasteride 1mg). In Italy it was authorized in 1997 for enlarged prostate, and in 1999 for androgenetic alopecia.

This drug can cause a wide range of emotional, psychological and sexual disorders that together define post-finasteride syndrome (PFS), a rare pathology that is not yet understood. The symptoms attributable to this syndrome, including sexual symptoms (erectile dysfunction, reduced libido, chronic testicular pain, penile shrinkage) and psychiatric symptoms (depression, anxiety, suicidal thoughts, insomnia), were first brought to light by young patients who had taken the drug to treat hair loss.

"It's important to emphasize that the definition of PFS extends to those cases in which the symptoms are persistent even months or years after stopping treatment with finasteride. These symptoms can occur during the period of intake and are the reason why many young men taking it for hair loss quit the drug. After quitting, in a variable period of time, related to the half-life of the drug in the body (3-5 months), the symptoms disappear. Unfortunately, about 3% of men undergoing this treatment do not show improvements after months, and these are considered PFS cases," says Cosimo Roberto Melcangi, Professor of Endocrinology at the University of Milan.

PFS patients can be divided into three main groups, based on the symptoms they present: alteration of sexuality associated with psychiatric alteration, psychiatric alteration only, or sexual alteration only.

"We have taken into consideration the damage to sexual activity caused by the drug," continues Professor Melcangi. "But in our opinion, the problem originates in the brain. Since finasteride is an inhibitor of a metabolic pathway in hormones, both in men with this symptomatology and in animal models, an alteration in the levels of certain steroids was measured. Contrary to what we thought at the beginning, this drug does not just act where it should, and can also create problems in a persistent manner. Given the great inhomogeneity of patients with PFS, it is very

difficult for us as doctors to find a common thread. To get a complete picture, you should know the clinical situation of patients before taking the drug, which is not possible. In patients, routine analyses do not show alterations. However, we have analyzed the epigenetic modifications of the enzyme involved and we have seen that, in these men, a specific modification is quite frequent. The problem is that we cannot know if it was present even before they took finasteride."

The laboratory directed by Professor Melcangi deals specifically with finasteride, and his aim is to investigate how certain metabolites involved in brain function are affected by this drug.

"I am absolutely not out to demonize this drug," says Melcangi. "We must realize that those who fall into 3% of PFS cases have their lives completely destroyed. But on the other hand, 97% of people using finasteride realize a beneficial effect in terms of hair growth. We can discuss the importance of hair growth, but the psychological aspect is still important: some people with androgenic alopecia consider themselves suffering from a serious alteration and this can lead to choosing a pharmacological remedy. Furthermore, alongside finasteride, we have recently shown that a genetic predisposition could play an important role in the onset of PFS. Otherwise, the disease would also occur in the other 97% of men who use the drug. Discussion of the condition is pervasive, buy the labs that deal with it are few."

In fact, worldwide, the labs that study this drug and its effects can be counted on the fingers of one hand, and have been doing so for a few years. In this context, the contribution of Italian research on a global level is remarkable, also because the pre-existing literature is based solely on questionnaires administered to patients, who have no medical weight.

The current studies are few: some Italian and one American, from Harvard University, which showed by MRI, that patients with PFS present alterations related to depressive symptoms.

"It all started from the Post-Finasteride Syndrome Foundation," explains Melcangi—which was initially established by the families of young men with PFS who, in some cases, have committed suicide. Later on, in Italy, the Finasteride Victims Association was born. "The message we'd like to convery is that, before recommending this drug, doctors should try to understand their patients' pre-existing conditions. This is important."