KERRY SKIN CLINIC
SKIN, HAIR + NAILS SPECIALISTS

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What is Dutasteride?

Dutasteride is an oral medication that was initially used to treat benign prostatic hypertrophy in men. It blocks an enzyme called 5-alpha reductase (5AR), which is responsible in the conversion of testosterone to dihydrotestosterone (DHT). DHT is one of the implicated hormones responsible for male pattern hair loss in individuals that are susceptible to it. While used off-label for male pattern hair loss/androgenetic alopecia (AGA) in Ireland, oral dutasteride (0.5mg/day) is approved to treat androgenetic alopecia in South Korea, Japan, and Taiwan (2).

How does Dutasteride help with hair loss?

While both finasteride and dutasteride are (5AR) inhibitors, **dutasteride blocks both type 1 and type 2 5AR**, whereas finasteride is only 5AR type 2. Dutasteride lowers serum DHT to 98% compared to 71% for finasteride (1). In addition, it is more slowly metabolized than finasteride, as evidenced by its **longer half-life** (time required for metabolism of 50% of the dose) in the serum. The **half-life is 5 weeks for dutasteride** compared to 6-8 hours for finasteride.

Formulations

Oral Dutasteride

The most common form dutasteride available is in capsules of **0.5 mg** .

Topical Dutasteride

Dutasteride is also available in the USA and Canada from multiple compound pharmacies in a topical liquid solution formulation. Sometimes, it is combined in a combination topical solution of both dutasteride and minoxidil.

Effectiveness of Dutasteride

Oral Dutasteride

Multiple studies have shown that oral dutasteride is superior to oral finasteride in improving AGA. A recent multicenter retrospective medical chart review study of 600 male patients with AGA showed that dutasteride given at 0.5 mg per day was superior at improving AGA compared to finasteride given at 1 mg per day and had a similar level of adverse events (2). Additionally, a randomized placebo controlled clinical trial of oral dutasteride in 20 to 50 year old men with AGA showed that **dutasteride 0.5 mg significantly increased hair count** and improved hair growth at week 24 compared with finasteride and placebo (3). Other randomized clinical trials also corroborated this data.

Topical Dutasteride

In addition to oral dutasteride, topical formulations of dutasteride may show clinical efficacy when applied either by itself or augmented with the addition of microneedling (mesotherapy). A 2022 randomized, double-blind, placebo-controlled study tested microneedling plus topical 0.01% solution of dutasteride versus microneedling plus saline solution alone in males with androgenetic alopecia (4). Male patients were randomly assigned to receive either 3 sessions of microneedling plus topical 0.01% solution of dutasteride or microneedling plus saline solution. At week 16, an expert dermatologist panel assessment of hair loss showed a **significant improvement in 52.9% of the men** in the microneedling-dutasteride group and 17.6% of those in the microneedling-saline group, with a statistical difference (p=0.037). Topical dutasteride is not considered very well absorbed into the skin so applying it as part of a mesotherapy is considered more effective than just topical solutions. When not combined with mesotherapy/microneedling, most studies of topical dutasteride show its efficacy when combined with other topical medications, but not by itself. More study is needed to assess whether topical dutasteride applied by itself is effective (5).

Dosage and Administration

Oral Dutasteride

The standard dosage of oral dutasteride is **0.5 mg per day**, although some physicians prescribe it as a twice weekly dosing regimen, considering the long half-life of oral dutasteride. It is important to follow your doctor's prescription regarding medication dosage and frequency of use.

Topical Dutasteride

Dosages of topical dutasteride solutions range from **0.1% to 0.3%**.

Side Effects of Dutasteride

The side effects of dutasteride are **similar to those reported for finasteride.**

- Decreased libido (sex drive)
- Erectile dysfunction
- Male breast enlargement
- Psychological depression

In **one double-blind study**, 2 out of 70 patients on 0.5 mg daily had decreased libido, and 2 out of 70 had impotence. 3 of 70 on a placebo developed impotence. 9 of 71 taking dutasteride 2.5 mg daily had impotence, indicating a correlation with dosage.

Another study showed a 25-28% decrease in sperm count in a one-year trial. Six months after discontinuing dutasteride, the sperm count was still lower than the initial count by 23%. Semen volume followed these same percentages. The sperm morphology appeared normal.

Drug interactions reported from use of dutasteride include interference with some antibiotics, some anti-depression and anti-anxiety medications, and some drugs used to treat HIV/AIDS.

Precautions

As with finasteride, dutasteride should not be taken or handled by a woman who is pregnant or who may become pregnant because of the drug's potential to cause abnormal development of a fetus.

Dutasteride vs Finasteride

Dutasteride has a **longer half-life than finasteride** and blocks both type 1 and type 2 5-alpha reductase enzymes, causing a significantly larger decrease in DHT. Dutasteride lowers serum DHT to 98% compared to 71% for finasteride. Given its effect on DHT, studies show that oral dutasteride may be more effective than oral finasteride in treating male pattern hair loss.

Dutasteride vs Minoxidil

Dutasteride targets the hormonal causes of hair loss by blocking DHT. Minoxidil is a medication that may help hair obtain growth factors by regulating blood flow to hair follicles. Dutasteride, in general, is thought to be **more effective than topical minoxidil** in preventing the progression of androgenetic alopecia and also in helping regrow hair. However, given the different mechanisms of action, oral dutasteride can be combined with topical minoxidil (and possibly with oral minoxidil). You must consult with your prescribing physician to discuss those options.

Combining other treatments with Dutasteride

As discussed above, topical and even oral minoxidil may be combined with oral dutasteride.

Purchasing Dutasteride

Oral dutasteride is best obtained as a prescription from your physician that specializes in hair loss. There are also various online services that may provide both oral dutasteride and compounded topical dutasteride prescriptions.

Expert Opinion

Since oral dutasteride is more effective at blocking DHT than oral finasteride and studies show that it is more effective at the treatment of male pattern hair loss, my decision to include this in a patient's regimen is supported by the evidence.

This article is based on information from **The International Society of Hair Restoration Surgery (ISHRS)**: www.ishrs.org

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