Literature Review

Nicole E. Rogers, MD, FISHRS | *Metairie, Louisiana, USA* | nicolerogers11@yahoo.com

Topical Finasteride: To Use or Not to Use?

Lee, S.W., et al. Systematic review of topical finasteride in the treatment of androgenetic alopecia in men and women. *Journal of Drugs in Dermatol.* 2018; 17:457-463.

This recent article set out to review the existing data on the use of topical finasteride for androgenetic alopecia.

Researchers conducted a search of Pubmed, Medline, Embase, PsychINFO, and the Cochrane database to identify studies regarding the efficacy of human *in vivo* topical finasteride treatment, including case reports, randomized controlled trials (RCT), and prospective studies. Strict exclusion criteria were applied and they narrowed it down to seven articles: five RCTs and two prospective uncontrolled trials. A total of 256 (24 female, 232 male) human subjects were studied and results summarized in a two-page table. The first (Mazarella 1997) was an RCT with 28 males and 24 females treated with topical finasteride solution 0.005% vs. placebo for 16 months. Based on physician assessment, 73% of patients in the finasteride group had moderate treatment effectiveness while 70% of the placebo had no to slight treatment effectiveness.

The second study (Hajheydari 2009) had 38 male patients in an RCT who used topical finasteride 1% gel with placebo oral tablet while the other group used oral finasteride 1mg with placebo gel for 6 months. Both groups had statistically significant increases in total and terminal hair counts but the oral finasteride group showed improvements earlier.

The third study (Rafi & Katz 2011) was a prospective cohort study in 15 males using NuH Hair (proprietary topical finasteride, dutasteride, and minoxidil) and it showed significant growth in all patients compared to baseline.

The fourth (Tanglertsampan 2012) was an RCT with 33 males who used either topical minoxidil 3% alone or topical minoxidil 3% plus 0.1% finasteride lotion for 24 weeks. Hair counts increased in both groups but was only significantly improved from baseline in the minoxidil + finasteride group.

In the fifth study (Caserini 2014), 23 males were put in an RCT using topical finasteride 0.25% solution BID vs. oral finasteride 1mg once daily for 7 days and their plasma DHT and testosterone levels were assessed. They found that the DHT was reduced by 68-75% with topical finasteride and by 62-72% with oral finasteride. There were no relevant changes in plasma testosterone with either treatment and no clinically significant adverse events occurred.

The sixth study (Caserini 2014) was an RCT with 50 males and two parts. In the first part, 1ml of topical finasteride solution 0.25% was applied once daily vs. 1mL of topical finasteride 0.25% applied twice daily vs oral finasteride 1mg daily for 7 days. This showed a 70% decrease from baseline in scalp DHT after once daily topical finasteride versus a 50% decrease for both twice daily topical finasteride or oral finasteride. In the second part, placebo versus varying quantities of topical finasteride 0.25% were applied to scalps to study the respective changes in scalp and serum DHT levels. Serum DHT was reduced by 24%, 26%, 44%, and 48% by 100µl, 200µl, 300µl, and 400µl, respectively. Scalp DHT was decreased by 47% (100µl), 52% (200µl), 37% (300µl), and 54% (400µl). There were no significant changes in serum testosterone levels.

In the seventh study, (Chandrashekar 2017), 50 males were retrospectively assessed with topical 5% minoxidil and oral finasteride 1mg for 2 years, followed by either topical minoxidil 5% fortified with finasteride 0.1% for 1 year either immediately or after 8-12 months without treatment. Of the 45 patients who had continuous treatment (oral to topical), 84.4% maintained good hair density with the combined topical treatment. Five patients took a break of 8-12 months in between oral and topical therapy. Of these, 80% maintained good hair density while on the 5% minoxidil and 0.1% finasteride solution.

No incidence of decreased sexual desire, performance, or sperm count were reported among the patients using topical finasteride.

Comment: These studies are helpful in determining the safety of topical finasteride for men who wish to avoid systemic side effects. The authors conclude that the most effective concentration and frequency at this time (suppressing scalp DHT with minimal serum DHT reduction) is achieved with doses of 100µL (0.2275mg) and 200µL (0.455mg) topical finasteride 0.25% solution applied once daily. However, additional questions remain, such as whether it is safe for use in women of childbearing potential (will it be considered pregnancy category C, as with topical retinoids, where the systemic form is category X?), whether to combine with minoxidil, and what vehicle is preferred. Drug industry funding and expertise would be helpful in establishing the best concentration and vehicle. There is still much more to be established in the development of a topical finasteride. ■