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Inside this issue

Medical Therapy for Female Pattern Hair Loss (FPHL)

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Female pattern hair loss…to treat or not to treat? And with what? Does anything really work for women?

Many in our field would argue that it's not worth even treating women, citing concerns about donor area, the paucity of effective treatments, or how it can be difficult or impossible to achieve patient satisfaction. But these concerns should not prompt us to give up. Rather, women can be some of the most rewarding patients to treat, and using simple things like handouts, dermoscopy, and photography can help increase understanding, reduce confusion, increase compliance, and dramatically improve their response to treatment.

Women often undergo an extensive workup before arriving at a diagnosis of FPHL. They may start by seeing their internist, then their OB/GYN, then their endocrinologist, and even a naturopath before seeing a dermatologist or hair loss specialist. Along the way, they may get told that the hair loss is due to stress, adrenal fatigue, or "low-normal" thyroid function, all of which when corrected fails to stop the hair loss—until they find YOU! In a matter of seconds, you recognize the presence of miniaturized hairs either on clinical examination or with the use of dermoscopy. Finally, they get the diagnosis they have been dreading: female pattern hair loss. They believe nothing can be done for them…or can it?

Although there is only one FDA-approved medication for hair loss in women (topical minoxidil), there are other off-label options such as oral spironolactone, oral finasteride, and certain birth control pills that can be tried before or in addition to hair transplantation. Women may also benefit from low level light therapy (LLLT), which has 510K FDA clearance as a medical device. Depending on how advanced their degree of hair loss, they may benefit from one or more therapies. The physician should consider their comorbidities, lifestyle, family planning, and personal preferences.

Topical Minoxidil

The only FDA-approved medication for hair loss in women is topical minoxidil or Rogaine®. There is new evidence that use of topical minoxidil can improve the quality of life with FPHL.[1] The drug is recommended for twice daily usage as a 2% solution for women and as a 5% foam and solution for men. The 2% solution has been shown to be effective at arresting hair loss in 60% of cases,[2] and even better results have been seen with the 5%.[3] Excellent results can be achieved with consistent usage (Figure 1). Recently, one study showed that the 5% foam worked just as well, used once daily in women, as the 2% worked twice daily.[4] There also were fewer complaints about pruritus and dandruff. Many physicians already recommend using the 5% foam once daily at bedtime as a way to increase compliance and simplify the morning grooming routine. This has since prompted the FDA to approve a women's 5% Rogaine foam formulation for once daily usage.[5] The risk of hypertrichosis should still be discussed as it has been reported in 8.9% of patients using this regimen.[6]

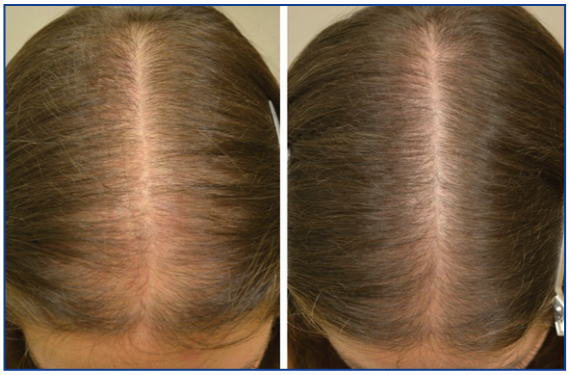

Figure 1. Before *(left)* and after *(right)* use of topical 5% minoxidil for 6 months.

Perhaps the most difficult thing about getting women to use topical minoxidil is helping them to *understand that it works*. They often believe that because it is over the counter, it can't possibly work. Or, they believe that if they stop it, ALL of their hair will fall out. Or that they have to use it forever. OR ELSE! These misconceptions can be addressed by drawing a simple diagram for your patients, using an x-y axis to demonstrate the natural progression of hair loss over time (Figure 2). By drawing a

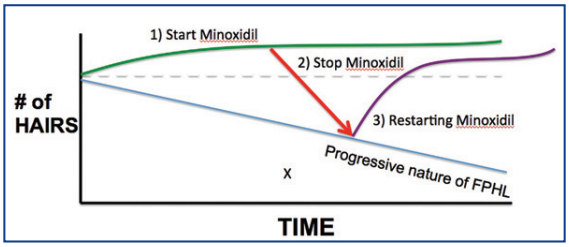

Figure 2. Diagram to increase patient compliance with medical therapy.

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President's Message

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I'm addressing this message more to the newer members of our Society and profession. Some simple principles are worth repeating. We all use different calendars. For many, January 1 starts the New Year. Some measure their year by the start of school.

My calendar year began in San Francisco with the ISHRS Annual Scientific Meeting. This year, as president, I made a promise to attend as many "Hair" meetings as possible. A friend once related to me that a hair surgeon she had a consultation with for her son told her proudly: "I don't waste time going to meetings." When she asked him how he kept current, he said the medical supply salesmen were his source of information. I was stunned. I've been doing only hair in my practice for 25 years and I find going to meetings invaluable. There is always something new to learn and apply to your patients. I have never walked away from a meeting empty handed. No doubt, attending a meeting is expensive. Travel, hotel, registration fees, and, most of all, the money you aren't making while away from your practice is considerable. We all have to make decisions based on cost/benefit.

Attending meetings has so many benefits professionally, and in the long run, it's money well spent if you maximize your participation. This is your chance to get to know and exchange information with peers one-on-one. These meetings give you an opportunity to become active by offering to serve on committees and help organizing workshops.

The ISHRS and the national and regional societies need your involvement if they are to stay relevant and vital. It's not a numbers game. Unfortunately a family situation caused me to miss the 20th anniversary of the Orlando Live Surgery Workshop in April. My congratulations go to Drs. Matt L. Leavitt and David Perez-Meza for organizing this successful meeting. I was told more than 100 doctors participated. Bravo!!

I am looking forward to the 5th meeting of the Brazilian Association of Hair Restoration Surgery (ABCRC) in São Paulo, Brazil, this May 21-24. Program Chair, Dr. Arthur Tykocinski, is a respected member of the ISHRS. South America, especially Brazil, has always been on the cutting edge of new techniques in aesthetic medicine. I expect to see innovative approaches to hair restoration there.

From June 13-15, I'll be in Brussels, Belgium, for the ISHRS European Hair Transplant Workshop that will focus on complementary approaches of FUE and FUT. Dr. Jean M. Devroye is a talented physician and experienced meeting organizer who has put together a first-rate international faculty of experts in the field.

From June 26-29, the Italian Society for Hair Restoration (ISHR) is holding their 15th biannual meeting in Siracusa, Sicily. Present and past ISHR presidents, Drs. Franco Buttafarro and Pietro Lorenzetti, are hosting this meeting. The meeting, with its blend of Italian and international faculty, is themed "Advancing in Hair Restoration."

From September 19-29, I'll be in Goa, India, for the Association of Hair Restoration Surgeons (AHRS)–India 6th annual meeting chaired by Drs. Rajesh Raiput, Anil Garg, and Kapil Dua. India is known for innovation in instrumentation and for the first time the meeting will include a cadaver workshop.

Unfortunately, I am not able to attend the 5th Annual Hair Restoration Surgery Cadaver Workshop in St. Louis, Missouri, from October 23-26. Having taught at cadaver workshops in Nice, France, I can tell you it's a good way to get hands-on experience for a beginner in our field.

My year highlights with the ISHRS 22nd Annual Scientific Meeting being held in Kuala Lumpur. I've already told you that the hard decision to move the meeting from Bangkok was made after much deliberation. I am heartened by the large number of abstracts we're receiving, the number of committed exhibitors, and the outstanding preliminary program Dr. Damkerng Pathomvanich has put together.

I am confident that this will be a record-breaking meeting.

My presidency over, I'll be attending the Japan Society of Clinical Hair Restoration (JSCHR) meeting from November 23-24. The program, which is chaired by Dr. Shinsaku Kawada, will be a fine way to end a very special year.◆

Co-editors' Messages

Mario Marzola, MBBS *Adelaide, South Australia* editors@ISHRS.org

In this issue, we have two articles on female pattern hair loss. Drs. Nicole Rogers and Bernard Nusbaum bring together in a concise and readable manner the current thinking on the diagnosis and treatment of this frustratingly difficult condition. Why is it different from male pattern hair loss? Is it truly androgen dependent? Why is there inflammation around the follicles? Why is female pattern hair loss so sensitive to shock loss (anagen effluvium) after hair transplants? Who hasn't seen the unhappy female patient a month after the operation with so much more hair loss than before? What a tragedy that is, more so because some of the hairs lost will not re-grow. I know of some doctors who tell their female patients up front that large numbers of grafts need to be planted as none of the existing hair can be relied upon to stay. I can understand how they have come to that conclusion.

What is the best way to handle female hair loss? Certainly, we should do all the blood tests to eliminate polycystic ovaries, thyroid conditions, low iron, or anything else that can cause hair loss. If we are not sure of the diagnosis, it can almost always be established accurately with a biopsy. Considering that the diagnosis will be a lifetime sentence, the inconvenience of a biopsy may well be worthwhile. Medical treatment to stabilize the loss then can be determined and, if we are lucky, re-grow some hair. There are many things we can try as can be seen in these articles, but it will take time and patience, maybe a year or two or three. Can you or your patient wait that long? Females with hair loss will book for a transplant immediately, but it does pay to go slow. There needs to be sufficient donor material with minimal miniaturization and there needs to be reasonable expectations. Small operations will minimize the risk of shock loss but to achieve enough coverage a number of sittings will be needed. Finally, the stabilization effort will need to continue indefinitely as all hair loss, male or female, is progressive.

There is so much more to write on this subject again. We have not touched on mesotherapy, which is very popular in some countries, and we have not explored PRP, ATP, or cell-based therapies sufficiently, and we could know more about the best and safest way to transplant hairs in females.

On another subject, the development of robotic abilities in hair restoration surgery never ceases to amaze me. Dr. Bernstein and colleagues have developed a recipient site making technology to add to the donor harvesting ability of the ARTAS robot. It's the early days yet and much more brainstorming will be required before they can offer a complete and safe graft planting system. For those of us interested in technology, it's going to be a fascinating journey.

I hope you are enjoying reading the *Forum,* our bimonthly newsletter on all things hair. I'm sure this field of hair restoration attracts more than its fair share of ingenious and lateral thinking practitioners. Bringing you some brain stretching information, news, and cheer every two months is our plan. For my part, I must thank my co-editor, Dr. Bob True, and our managing editor, Cheryl Duckler, for their help and patience for without it my editing learning curve would be much steeper.◆

Robert H. True, MD, MPH *New York, New York, USA* editors@ISHRS.org

Last week I participated in the last ISHRS CME committee meeting and have been part of the abstract review process. After listening to Dr. Damkerng Pathomvanich's meeting plans and Victoria Ceh's description of potential activities, I am getting very excited about our upcoming annual meeting in Kuala Lumpur. It will be innovative, engaging, and fun!

The Cyberchat column is short this time, but you shouldn't miss it. The concept of iatrogenic, or "surgical," hair loss as an important concern for all of us is outlined very clearly by Dr. Wolf.

We don't see post-operative infections very often, but they do occur, even with unusual causes as described by Drs. Scott Boden and Marco Barusco in the Complications column. No matter how much experience you have as a surgeon, you are still going to see things you have never seen before.

Drs. Nicole Rogers and Bernard Nusbaum have given us precise and thorough outlines of the state of the art in treatment of FPHL. Of course, we need even better therapies, but, I do feel that this unified approach to therapy provides the best potential outcomes for our female patients at this time.

Thanks to Dr. Ricardo Lemos for sharing the story of the Brazilian Association of Hair Restoration Surgery. I have a lot of respect for the abilities of our Brazilian colleagues and I am looking forward to attending their May 2014 meeting.

Learning how to do FUE without shaving is very challenging. Dr. Timothy Carman's "How I do It" column by Dr. Jae Park and the associated commentaries provide some good practical suggestions.

Have fun with Dr. Wasserbauer's quiz; you will probably learn something about PRP you didn't know before.

Frontal Fibrosing Alopecia (FFA) is a hot topic these days. In this issue Dr. Donovan reviews a well-designed study on therapy of this condition.

Kudos to Victoria Ceh, Dr. Cotterill, and the CME committee for achieving ACCME Accreditation with Commendation for Educational Activities. See their article for more detail.

And finally, all readers will be intrigued to read about the application of robotics to recipient site creation in an excellent article in this issue by Drs. Bernstein, Wolfeld, and Zingaretti.◆

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2. If results are presented, the medical regimen or surgical techniques that were used to obtain the results should be disclosed in detail.
3. Articles submitted with the sole purpose of promotion or marketing will not be accepted.
4. Authors should acknowledge all funding sources that supported their work as well as any relevant corporate affiliation.
5. Trademarked names should not be used to refer to devices or techniques, when possible.
6. Although we encourage submission of articles that may only contain the author's opinion for the purpose of stimulating thought, the editors may present such articles to colleagues who are experts in the particular area in question, for the purpose of obtaining rebuttal opinions to be published alongside the original article. Occasionally, a manuscript might be sent to an external reviewer, who will judge the manuscript in a blinded fashion to make recommendations about its acceptance, further revision, or rejection.
7. Once the manuscript is accepted, it will be published as soon as possible, depending on space availability.
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10. All photos and figures referred to in your article should be sent as separate attachments in JPEG or TIFF format. Be sure to attach your files to the email. Do NOT embed your files in the email or in the document itself (other than to show placement within the article).
11. We CANNOT accept photos taken on cell phones.
12. Please include a contact email address to be published with your article.

Submission deadlines:
June 5 for July/August 2014 issue
August 5 for September/October 2014 issue

Notes from the Editor Emeritus

Bernard Nusbaum, MD *Coral Gables, Florida* drnusbaum@yahoo.com

Female hair loss diagnosis is a time-consuming yet extremely rewarding endeavor for the physician. It encompasses the detective skills of taking an inquisitive, detailed medical history and requires an in-depth scalp examination looking for clues to derive at a diagnosis. I would like to make note of some of the current trends relevant to this field and hope not much overlap occurs with Dr. Roger's lead article.

Scalp dermoscopy has emerged as an invaluable tool in recognizing features of various alopecias not appreciable with the naked eye. Dermoscopy is particularly helpful in differentiating non-scarring alopecias, such as chronic telogen effluvium, in which abnormal miniaturization is absent, contrasted to female pattern hair loss (FPHL) where the ratio of terminal to vellus hairs is decreased and miniaturization results in hair diameter diversity. Alopecia areata, meanwhile, shows yellow brown dots at the follicular orifice (also seen in some cases of FPHL), but it also shows black dots and dystrophic hairs with a monomorphic population of miniaturized hairs rather than the variation in diameter seen with FPHL.

With regards to therapeutic assessment, I prefer coupling global photography with hair bundle cross-section measurements using the HairCheck® device to follow a patient's response. As I presented in San Francisco, these two modalities show a high degree of correlation, and combining them enhances a physician's ability to determine the patient's progress. Cross-section hair bundle measurements compensate for the many limitations of photography, such as changes in hair length, color, or hairstyle at different visits. Patients like the HairCheck and are very receptive to having a numerical value assigned to their hair, to be compared on subsequent visits.

An important finding that, in my opinion, has helped us design more effective therapies for FPHL is the recognition of an indolent inflammation, which is a pathologic feature of this condition.[1] There is empiric evidence that therapy targeted to attenuate this inflammatory component results in enhanced efficacy.[2] For example, I have found that compounding topical corticosteroids along with minoxidil improves our results in FPHL as compared to minoxidil alone. In the hope of achieving even better results, we add low level laser therapy (LLLT) to this topical regimen and my impression is that results are further enhanced with the combination. This "shotgun" type of approach does not allow us to evaluate the contribution of each treatment component, yet patients don't seem to care about that, and generally only concern themselves with achieving improvement.

Although evidence-based data has been limited demonstrating the efficacy of LLLT, a recent multicenter, randomized, double-blind study compared the laser comb to a sham device in 128 men and 141 women for 26 weeks of treatment. The laser comb was shown to achieve a statistically significant increase in mean terminal hair as compared to the sham device, and no adverse effects were reported.[3] Certainly, we need additional studies to see if the benefits of LLLT can be maintained over the long term and to determine if, in fact, the effects are additive or synergistic with minoxidil or other topical treatments. We also have not yet defined the preferred wavelength, power, treatment frequency, or duration to achieve optimal results with this modality.

Evaluating female hair loss patients generally encompasses doing some laboratory blood work and, in the past couple of years, I have added a vitamin D level to this panel. Vitamin D deficiency is increasingly common in the general population and I have seen patients in whom vitamin D deficiency was probably related to telogen effluvium that resolved with adequate replacement. The vitamin D receptor is intimately involved with activating hair growth and mice genetically deficient in a vitamin D receptor antagonist generate more hair than controls. Moreover, molecules that activate the vitamin D receptor promote differentiation of skin cells into hair follicle cells. Vitamin D toxicity can result in systemic adverse effects, so the hope is to develop topical agents that selectively manipulate the vitamin D receptor in the scalp and hair follicles. It should be noted that while our focus is generally to look for dietary or other deficiencies as contributory to female hair loss (such as zinc, vitamin B12, and folate), we need to remember that toxicity due to environmental agents such as copper, arsenic, cadmium, or mercury can also be associated with hair loss.[4] The recent popularity of eating sushi in the United States has prompted me to question patients about excessive dietary intake of fish containing high mercury levels (such as tuna, swordfish, or Chilean sea bass), and I have found abnormally high blood levels of mercury in some patients presenting with telogen effluvium. Obviously, it is impossible to determine if mercury was in fact the causative agent.

Lastly, knowledge of hair cosmetics is extremely helpful when treating female hair patients and, in the past couple of years, I have seen several women who presented with acute onset of hair loss following Brazilian keratin hair-straightening treatments. The hair loss appears to be secondary to both hair breakage and a form of effluvium with the most likely culprit being the formaldehyde in these products. Interestingly, a recent study measured the formaldehyde concentration in seven Brazilian keratin products and found that six had formaldehyde levels approximately 5 times higher than the level recommended by the United States Cosmetic Ingredient Review Panel. Some of these brands were, in fact, labeled as being "formaldehyde free."[5]

I have tried to touch upon a few of the topics that I feel are of current interest, but I wish to stress that empathy and bedside manner are extremely important for physicians to embrace when treating these patients, as female hair loss has been demonstrated to impact quality of life (QOL). An improvement of QOL was achieved in those individuals with successful hair treatment outcomes.[6]

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FPHL *from front page*

new (green) line, women can understand what will happen if they use medical therapy. And if they stop, they will just trend back to their natural course of thinning. By restarting, they will trend up again (purple line). They will not end up below this line (X), which is worse off than if they had never used the medication.

Minoxidil can still be a hard sell. Some women of Middle Eastern or Hispanic ancestry (or with polycystic ovary syndrome) may already suffer from significant hirsutism and do not want to worsen it with topical minoxidil. Other women in their 50s or 60s do not wash their hair more often than once a week, and dislike the idea of putting a product on the scalp every day and then not washing it out until they return to the salon. These women can benefit from off-label options like birth control pills, spironolactone, or finasteride.

Spironolactone

Spironolactone is a diuretic with anti-androgen properties. It can be helpful to explain to women that they have both estrogens (girl hormones) and androgens (boy hormones), and that in most women with FPHL these levels are NORMAL.[7] However, their follicles are genetically more sensitive to circulating levels of androgens, specifically in the frontal 1/3-2/3 of the scalp (or on the sides). Thus, spironolactone helps to block these androgen receptors and can help prevent the miniaturization process on the follicle.[8,9] Figure 3 shows an excellent response to 100mg/day over a 6-month period. The patient was an otherwise healthy 19-year-old female with a strong family history of thinning (father balded in his 20s). The patient was also advised to use topical minoxidil but admitted to using it only intermittently (once weekly).

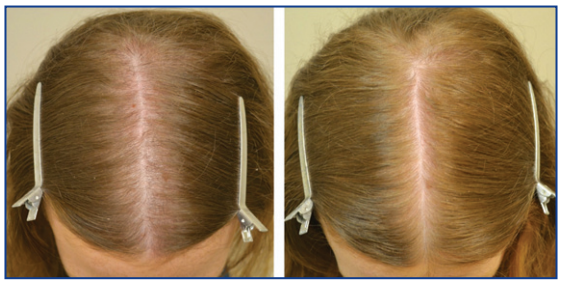

Figure 3. Before *(left)* and after *(right)* oral spironolactone 100mg/day for 6 months.

Spironolactone can be an excellent choice for women with polycystic ovary syndrome, who already have signs of hirsutism or acne. The anti-androgen effects of spironolactone are already used widely in the field of dermatology to successfully treat both conditions. Women who are already on HCTZ or another diuretic for hypertension/fluid retention may be switched to spironolactone as a single agent to treat both conditions. This should obviously be done with the involvement of their internist. With rising health care costs, and an already complex health care system, such women are usually grateful for a drug that addresses two or more conditions. The data supporting the link between hair thinning and heart disease might imply that we should place all our FPHL patients on spironolactone![10]

In order to slow down early thinning, patients may start at doses of 100mg/day. In order to achieve regrowth, higher doses of 200mg/day are generally required.[11] The drug is a potassium-sparing aldosterone antagonist, so patients should avoid additional potassium supplements and make sure not to consume a lot of bananas. It also can potentiate sodium wasting (syndrome of inappropriate antidiuretic hormone, SIADH) secondary to selective serotonin re-uptake inhibitors (SSRIs). This should be discussed if patients are already on a drug such as fluoxetine or paroxetine. They can either take the full dose at once or spread it out over the course of the day (100mg twice a day). Their preference will generally be affected by whether the diuretic effect wakes them up at night. These patients may prefer to take it all as a single morning dose.

Other side effects can include breast tenderness, mid-cycle spotting, a diminution or disappearance of the menses altogether, or light-headedness. These can be reasons to gradually escalate the dose over a 4-6 week period. The author frequently writes for 50mg daily × 2 weeks, 100mg daily × 2 weeks, and 150mg daily × 2 weeks, and then has the patient come back to check potassium and sodium. If all is within normal limits and the patient is tolerating the drug well, their dosage may be upped to 200mg daily. Electrolytes should be checked every 3-6 months, increasing to every 12 months the longer the patient stays on the drug.

Due to the anti-androgen effect, women should not get pregnant on this drug. It is helpful to explain that the same anti-androgen effect that this has on the hair follicle it may also have on a male fetus. The author does not require all patients to be on birth control pills, but advises them to stop it immediately if they get pregnant.

Finasteride

Early data investigating the use of 1mg daily finasteride in women failed to show any improvement over placebo.[12] One of the study's authors (VP) suggests that this was likely due to the inclusion of women with senescent alopecia, which may not respond to any drug therapy. Subsequently, other studies done in the United States and around the world using higher daily doses of 2.5-5mg finasteride showed some significant results.[13-15] The largest of these came from South Korea, showing that 70/86 (81.4%) of normoandrogenic women treated with 5mg finasteride for 12 months had improvement in global photographs. There were statistically significant improvements in hair caliber and hair density using scalp tattooing with microscopic scalp analysis.[16]

Widespread implementation for FPHL has been limited by concerns about breast changes or breast cancer. In the Propecia® post-marketing reports, there were reports of breast tenderness and enlargement in men. However, new data published in the Journal of Urology showed no statistically significant connection between breast cancer and the use of 5-alpha reductase inhibitors.[17] Although this study was limited to men, it can make us more comfortable prescribing the drug in women. Recommending annual mammograms can help protect us as prescribers. Women with a strong personal or family history of breast cancer may still choose not to use this drug. Ultimately, the decision should be made by the patient and physician together. In the author's experience, women are seldom put off by this potential risk and are grateful for another treatment option. Figure 4 demonstrates results before and 6 months after daily use of 5mg finasteride.

Finasteride can be a good alternative for women who have no cardiovascular risk factors (hence would not need spironolactone) or who already have a very complicated medical history

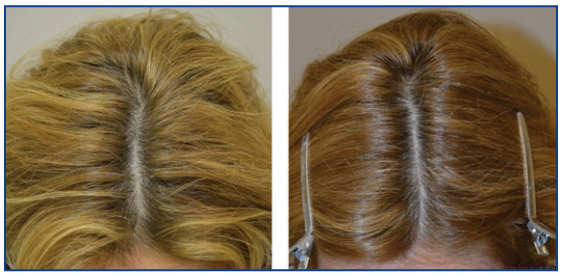

Figure 4. Before *(left)* and after *(right)* oral finasteride 5mg/day for 6 months.

(and you don't want to interfere with their drug regimen). The physician should explain that it is metabolized by the liver but that there are no real drug interactions. It should only be offered to women who are not able to or are planning to conceive in the near future. These women should have undergone a hysterectomy, had their tubes tied, or be on 1-2 forms of long-term and reliable birth control. They must stop the drug IMMEDIATELY if they get pregnant. They also should not donate blood while they are taking the drug.

The medical literature supports the use of 2.5-5mg daily for FPHL. In the author's experience, most women report no side effects. Insurance coverage varies: first, because it is approved for prostate enlargement in MEN, not WOMEN, and second, because insurance may consider hair loss cosmetic. Patients with access to Walmart may find finasteride on the "$9 list" for a 30-day supply of 5mg pills. Ninety days will cost them $24. Men taking finasteride may also benefit from this discount.

Dutasteride

Dutasteride blocks both type II and type I 5-alpha reductase enzyme, decreasing the levels of serum DHT by 90% versus 70% with finasteride. It has been successfully proven to help treat MPHL, but its widespread implementation has been limited by concerns about a long-term reduction in sperm counts. There is evidence that it can be very helpful in addressing FPHL, however, it tends to be more expensive than finasteride and we have fewer studies in women.[18]

Birth Control Pills and Other Anti-Androgens

Certain birth control pills may benefit women with hair loss. In particular, the brands Yaz® and Yasmin® (which contain both estradiol and drospirenone) appear to have the most efficacy. Drospirenone is a cousin to spironolactone, and can exert similar anti-androgen effects. Diane 35 is a birth control pill available in Canada containing cyproterone acetate. This ingredient is not US FDA approved. Although there is evidence that cyproterone acetate and flutamide, another systemic anti-androgen used to treat prostate cancer, can improve FPHL, their widespread implementation is limited by concerns about hepatotoxicity.[19]

Ketoconazole Shampoo

Given the observation that an inflammatory infiltrate rich in lymphocytes has been seen in areas of hair loss or balding, and that exacerbations of AGA have been seen with seborrheic dermatitis, a study was done to see if 2% ketoconazole shampoo could exert an effect on the thinning process. After 6 months in this small trial (39 patients total), the ketoconazole group demonstrated 18% improvement in hair density versus 11% improvement in the minoxidil + non-medicated shampoo group.[20] It is still unclear whether the hair growth effect is through anti-inflammatory, anti-fungal, or anti-androgen mechanisms. Larger controlled studies are needed. In the meantime, it is an easy addition to the medical therapy since most patients have to shampoo anyway.

Topical Estrone Cream

There was a report in Greece using topical estrogen cream applied to the scalp of women with FPHL. In a study of 75 post-menopausal females, it demonstrated improvement (via decreased telogen rate and/or increased anagen rate) in 60-65% of patients applying a lotion with estradiol valerate .03% over 12-24 weeks. The side effects included postmenopausal uterine bleeding in 2 patients and breast cancer in one patient.[21] An important concern would be the development of an estrogen-dependent tumor, especially in a person with family history of breast or uterine cancer. Dr. Bobby Limmer reports recent use of this compound, and has been seeing quite impressive results. His data is forthcoming. In the meantime prescribers should balance the risks with the benefits for all possible patients.

Pregnancy and Lactation

If a patient is planning to get pregnant in the near future, she should not be prescribed either spironolactone or finasteride, given the risk of birth defects. Patients can continue with topical minoxidil right up until they get pregnant; however, they should stop when they get pregnant because there are isolated reports of birth defects. Patients can be reassured that the hair will thicken during the course of their pregnancy. The hairs will enter a resting telogen phase and won't shed until 3-6 months after the baby is delivered.

Patient Satisfaction

Although it can be time-consuming, patient photography is essential to motivating patients. The author takes standard photos at the initial visit, with the hair parted down the middle and pinned to the sides. The chin should be turned slightly down so that the anterior and posterior aspects of the part are equidistant from the camera lens. Similar lighting, backdrop, and distance to camera are ideal. Patients should return for follow-up at 6-12 month intervals to assess their results. The author uses an iPad with photos uploaded from their previous visit. Many patients think there is no improvement until they see their old images and cannot believe their eyes!

Hair Thickening vs. Hair Growth Products

There are a large number of products on the market that claim to "instantly increase density" of hair. Such products are usually in the form of shampoos, conditioners, or serums applied to the hair. These products can be very effective at coating the hair shaft so that it feels thicker. However, the results will only last until the next hair washing. Patients should understand the difference between these products and those that actually can make the hair GROW thicker!

Conclusion

While the medical treatment of FPHL can be challenging, it can also be extremely rewarding. Patients are relieved to know they have options, and thrilled when they see results. In advanced cases, this may require some trial and error, or a combination of

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FPHL *from page 87*

Figure 5. Before *(left)* and after *(right)* combination treatment with 5% minoxidil, oral spironolactone, and oral finasteride for 3 months.

therapies (Figure 5). Successful treatment of young women can be especially satisfying because we are improving their sense of confidence for a lifetime ahead.

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Editor's Note: We are indebted to Dr. Nicole Rogers and to Dr. Bernard Nusbaum (see Editor Emeritus) for their articles on female pattern hair loss (FPHL) in this issue of the *Forum*. They bring the current thinking on the medical treatment of this difficult condition into focus. Hair transplantation is often also available for these patients, but it's more difficult than in males and would make a suitable subject for another time. While we can currently make some difference for female hair loss sufferers, most of us working in this field would be happier if we could do more. We hope that something better will come along and soon. Already there are many doctors using PRP in hair loss but scientific studies are few. Anecdotally, the reports, however, are encouraging.

As in so many difficult to treat conditions there is an inverse relationship between the number of therapies and the likelihood that any will be of great benefit. Thus, the plethora of treatments for FPHL, noted our esteemed colleague, Dr. Bob Haber, in a recent communication.

Understanding the pathogenesis of FPHL is the first step, then therapy should be made easier. We are getting closer but not there yet. —MM◆