Dr. Reddy's

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Clinograph Insights

Diagnosis and management of female pattern hair loss

OVERVIEW

Female pattern hair loss (FPHL) is characterized by reduction in hair density over the crown and frontal scalp with retention of the frontal hairline, due to a process known as follicular miniaturization.[1,2] FPHL is a multi-factorial entity. FPHL tends to occur in genetically pre-disposed patients with altered hair follicle cycling and miniaturization of hair follicles leading to the transformation of terminal to shorter and finer vellus hair follicles.[1]

Duration of anagen in FPHL[1]

- Shortens dramatically from 3 to 6 years to few weeks or months

Duration of telogen in FPHL[1]

- Remains the same or lengthens to more than 3 months resulting in an accelerated turnover of anagen hair
- Increased hair shedding following combing and washing

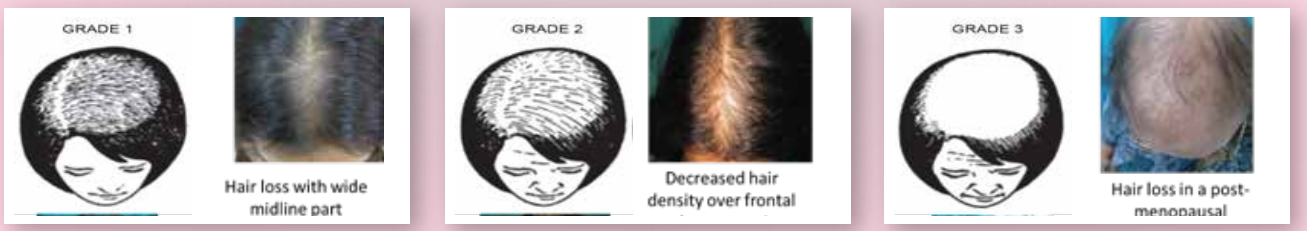
The androgen receptor content in female frontal hair follicles is 40% lower than that in the male follicles. Frontal hair follicles in women have 3 and 3.5 times less 5α-reductase I and II levels, respectively. However, aromatase content in frontal hair is six times higher in women. Women with FPHL are more likely to show signs of virilization and some reveal hyperandrogenemia. Clinical evidence has highlighted, out of 109 women with FPHL, 38.5% were found to have a clinical or biochemical evidence of hyperandrogenism.[1]

Ludwig classification of female pattern hair loss

Gradual thinning of scalp hair, often over a period of several years is the usual presentation of FPHL. The hair loss may commence early in teens to as late as post-menopause. Enrick Ludwig rendered a comprehensive classification depending on the progression of the hair loss. In the Ludwig's classification, three patterns representing stages or progression of FPHL are recognized (Figure 1) 1,2

- Grade 1: Perceptible thinning of the hair on the crown, limited in the front by a line situated 1–3 cm behind the frontal hairline
- Grade 2: Pronounced rarefaction of the hair on the crown, within the area seen in grade 1
- Grade 3: Full baldness (total denudation) within the area seen in grades 1 and 2.

Figure 1: Ludwig classification of female pattern hair loss[1]



Evaluation of female pattern hair loss[1,2]

Histor

- Chronic illness, nutritional deficiencies, metabolic and endocrine perturbations, recent surgical and medical treatments
- Menstruation and use of oral contraceptives
- Hair care products

Non-invasive

- Questionnaire, daily and 60-s hair counts
- Pull test
- Standardized and modified wash test
- Global photographs
- Dermoscopy
- Phototrichogram
- TrichoScan
- Polarizing, and surface electron microscopy

Semi-invasive

- Trichogram and unit area trichogram

Invasive

- Scalp biopsy

Laboratory test

- Free androgen index (FAI) and prolactin levels as screening tests
- Thyroid function

Treatment for female pattern hair loss

Counselling: Patient should be adequately counselled about the need for detailed evaluation, availability of effective medical treatments, realistic expectations, and the need for long term, indefinite treatment to maintain response.

Pharmacological treatments for FPHL may be topical and oral. They can also be divided into drugs with androgen-dependent and independent mechanisms of action.

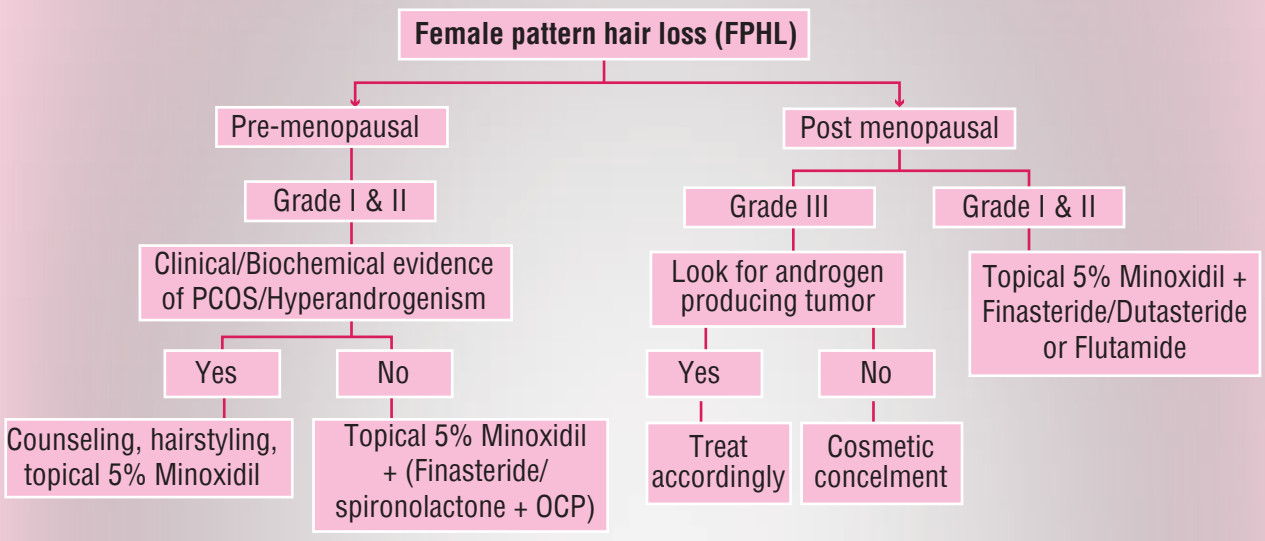
Topical minoxidil

- It is a piperidinopyrimidine derivative and potent vasodilator. It is a pro-drug that is converted to its active form, minoxidil sulfate, by sulfotransferase enzymes in the outer root sheath of hair.[2]
- Minoxidil increases follicular vascularity (as a potassium channel opener), prolongs anagen, shortens telogen, and converts partially miniaturized (intermediate) to terminal hairs.[1,2]
- In a 48-week study of 381 women with FPHL, both 2% and 5% MNX applied twice daily were found to be superior than placebo, and 5% MNX demonstrated statistical superiority over the 2% in terms of the patient assessment of treatment benefit[1]

- Patient should be informed about the initial increased hair loss following initial topical minoxidil application. This is followed by stabilization in hair loss and then noticeable increase in hair in 8-12 weeks and usually peaks after 16 weeks. Therefore, long term treatment is necessary[1]
- Minoxidil is well tolerated treatment; most common adverse effects observed are unsightly deposits on the hair-simulating dandruff, scalp irritation, and occasionally contact dermatitis that is due to vehicle propylene glycol rather than active molecule[1]
- As minoxidil is well tolerated and effective should be the first line treatment for female pattern hair loss[1,2]

A practical approach to the treatment of FPHL has been summarised in the flow chart (Figure 2).[1]

Figure 2: Algorithm showing practical approach to the management of female pattern hair loss



Key highlights

- Female pattern hair loss (FPHL) is a common cause of hair loss in women
- Thorough history, clinical examination, and evaluation are essential to confirm diagnosis
- Medical treatment should be initiated early as it effectively arrests hair loss progression rather than stimulating regrowth
- Topical minoxidil 5% is well tolerated and effective option, as first line treatment in FPHL

REFERENCE

1. Singal A, Sonthalia S, Verma P. Female pattern hair loss. *Indian Journal of Dermatology, Venereology, and Leprology.* 2013 Sep 1;79(5):626.
2. Bhat YJ. Female pattern hair loss—An update. *Indian Dermatology Online Journal.* 2020 Jul;11(4):493.

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