

Lecture Notes 講課重溫

Facts about Male Pattern Hair Loss in Hong Kong

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Androgenic alopecia is the most common type of hair loss affecting 40-50% of men by age 45 worldwide. A survey on hair loss carried out in Hong Kong in 1999 at the University of Hong Kong Social Science Research Center showed comparative figures and results. The disease may run in families through polygenic transmission, and may cause severe psycho-social effects on affected individuals.

Androgenic alopecia in men typically follows the rise in androgen levels at puberty and may become obvious in early adulthood. The relationship between hair loss and androgens was proven in studies of men with testicular insufficiency. Men who failed to have sexual maturity (eunuchs and enuchoids) had no problems of hair loss. Baldness can be induced by giving testosterone to sexually immature men and halted by stopping the androgen treatment, especially in those eunuchs with a family history of hair loss. Further studies showed that male pseudohermaphrodites with a genetic defect in 5-alpha reductase ($5\alpha R$) do not have temporal hairline recession but have sparse facial and chest hair, female pattern pubic hair, and well developed musculature after puberty. The enzyme $5\alpha R$ catalyses the conversion of testosterone to dihydrotestosterone (DHT) which is essential for male sexual differentiation in utero. The functions of DHT at puberty include stimulation of prostatic growth and male facial/body hair, and temporal recession of hairline.

The enzyme $5\alpha R$ exists as two isoenzyme, type I and type II. In the scalp, type I isoenzyme is mainly found in the sebaceous glands, while type II is present in both the inner and outer root sheaths of scalp hair follicles in both normal men and men with androgenic alopecia. In patients with androgenic alopecia, the increased level of DHT in the balding scalp causes (a) shortening of the anagen phase of active hair growth, resulting in shorter hairs; (b) lengthening of telogen phase with increased number of telogen hairs which shed easily; and (c) miniaturization of hair follicles resulting in finer, smaller and light-colored hairs. The drug finasteride acts by inhibition of the type II $5\alpha R$ activity, resulting in a lower concentration of DHT in the scalp. It is not an antiandrogen, so it has no blocking effects on the physiologic roles of testosterone.

Scientific studies of finasteride on androgenic alopecia were carried out worldwide to assess the clinical efficacy and safety of this drug. The severity of baldness was classified according to the Norwood-Hamilton Scale. Both subjective assessment by patients and objective assessment including hair counts were made very 3-6 months, with finasteride and placebo control. In the finasteride group, it was found that over 80% of patients had no further hair loss, in which about two-thirds of patients had increased hair growth of various degrees. The hair counts in the responding patients continued to rise and reached a plateau at around 12 months. This effect could be

maintained with continuous administration of the drug. If treatment was stopped at 12 months, a gradual decrease of hair count was noted, returning to about the baseline level in 12 months. In the placebo group, further hair loss was noted. If finasteride was started at 12 months, a similar result was obtained like the finasteride group. No major side effects were reported in these studies.

In Hong Kong, a small-scaled study was carried out since early 1999. Patients aged between 18 and 40, with N-H scale type II to V of androgenic alopecia, and normal CBC, LFT and PSA blood levels, were recruited. Subjective assessments include patient's satisfaction level, and objective assessments using clinical photos at various angles of the scalp, were employed. Out of the 30 patients who completed the first 12 months cycle, 8 noticed no improvement and refused to start the second cycle; 12 noticed slight improvement and 10 had moderate improvement. Those who failed to respond belonged to the older age group, i.e. age 35 and over. No significant side effects including sexual disturbance were reported.

All patients responding to finasteride consented to enter the second 12 month cycle of treatment, and the study was ongoing. In this small scaled clinical study, it may be concluded that over 70% of patients with androgenic alopecia noticed improvement with finasteride treatment, and the drug was safe with no severe adverse effects. The long term beneficial effects on patients with androgenic alopecia would depend on the results of the study after completion of the second 12 month cycle.