Cyclical medicine for hair loss management and improved results in hair transplantation

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Apart from androgenetic changes, hair loss, especially in women, has been attributed to internal factors such as nutritional deficiencies, hormonal imbalance, metabolic changes, and seborrheic scalp. External factors that might contribute to hair loss include dust, pollution, chemical treatments, dyes, excess heat or cold, and poor hygiene. While minoxidil and finasteride are useful for treating androgenetic hair loss, our treatment philosophy is to treat all cases of hair loss with the combination treatment described below.

In this study of 500 patients we combined the use of antioxidants, iron, calcium, zinc, amino acids, and vitamins E, D, and C[1-3] with minoxidil and finasteride[4-6] to control hair loss, reverse miniaturization, and achieve new hair growth within 2-4 months. The patients were also followed clinically for 2 years and were observed to maintain their improvement. The supplements and finasteride are used cyclically once every 3 days. We believe the cyclical approach helps to prevent vitamin overdose and the side effects of finasteride.

Material and Methods

The study included 500 patients randomly selected irrespective of age, sex, and grade of hair loss who were grouped as follows:

- Group I: Male test group with 200 patients who followed cyclical medicine (Tables 1 and 2)
- Group II: Male control group with 200 patients of similar age and hair loss grades as Group I, but who followed conventional minoxidil 2% and finasteride 1mg daily
- Group III: Female test group with 50 patients who used cyclical medicine; finasteride was not used
- Group IV: Female control group with 50 patients of similar age and hair loss as Group III, who used minoxidil 2% and B complex with biotin 260mg daily

Table 1. Cyclical Medicine Program

- Treatment repeats in 3-day cycles
  - Day 1: Antioxidants, Calcium
  - Day 2: Iron, Folic Acid & Vitamin C
  - Day 3: Amino Acids & Finasteride 1mg (Biotin in females)
- Minoxidil 2% local application every day
- 2% Ketoconazole & Zinc Pyrithione Shampoo every 3 days

All patients were clinically evaluated every 2 months using digital photographs[7,8] and folliscopic analysis. Evaluations were performed by four different assistants who were not aware of the patient profile and patient group. In male groups, the serum DHT levels were studied every 4 months. Male patients were asked to report any sexual side effects or breast tenderness.[6]

Results

Age varied from 15 to 73 years, with 79% of the patients in the range of 21-40. Fifty-five percent of the patients were Hamilton Grades III and IV.

In Group I, the average improvement in density with cyclical medicine was 30% at 2 months and 52% at 4 months.

Table 2. Formulas Used (over-the-counter)

Day 1	Day 1	Day 3
Antioxidant composition	Calcium tablet	Amino acids
Eicosapentanoic acid 45mg	Calcium Carbonate 400mg	Alanine 11.9mg
Docosahexanoic acid 35mg	Calcitrol 0.25mcg	Arginine 23.5mg
Vitamin E 25IU	Zinc 7.5mg	Aspartic acid 35.2mg
Zinc 7.5mg		Cystine 3.9mg
Beta Carotene 5mg	**Day 2**	Glutamic Acid 61.8mg
Folic acid 5mg	Iron & Folic acid	Glycine 12.8mg,
Vitamin B6 3mg	Carbonyl iron 100mg	Histidine 7.7mg
Manganese sulfate 4.5mg	Adenosylcobalamine 500 mcg	Isolucine 14.6mg
Copper 1mg	Folic acid 1.5mg	Lucine 23.8mg
Chromium 200mcg	Zinc Sulfate 61.8mg	Lysine 19.6mg
Selenium Dioxide 150mcg		Methionine 3.9mg
Vitamin B12 15mcg.		Phenylalanine 16mg
Vitamin C 75mg		Serine 16mg
Vitamin A 5000 IU		Threonine 11.3mg
Vitamins D2 & D3 400IU		Proline 16mg
Thiamine 5mg		Tryptophan 3.6mg
Riboflavin 5mg		Tyrosine 11.9mg
Nicotinamide 50mg		Valine 14mg
Calcium pentothenate 5mg		
Magnesium dioxide 30mg		

The average improvement in caliber was 37% at 2 months and 47% at 4 months (Figure 1, A and B; Chart 1). Patients with temporal angle receding and thinning in the crown area also responded well to 4 months of cyclical medicine. In control Group II, density improved by an average of 2% at 2 months and 3.6% at 4 months. Caliber was unchanged in 44% of the patients, it was improved by 1.4% at 2 months and 5.5% at 4 months, at which time 26% of patients still had no improvement.

Group III, female patients on cyclical medicine, showed an average 31% improvement in density at 2 months and 51% at 4 months. The improvement in caliber was 21% at 2 months and 53% at 4 months (Chart 2). Patients with Polycystic Ovarian Disease (PCOD) also responded without the use of anti-androgens (Figure 2, A and B). Receding female hair also showed marginal correction. Control Group IV

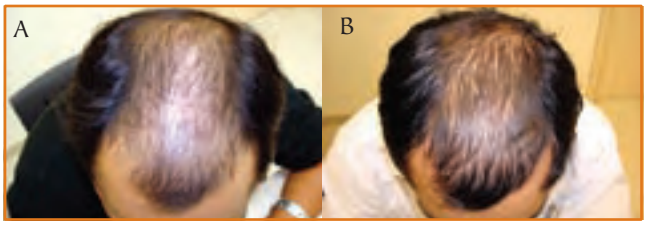
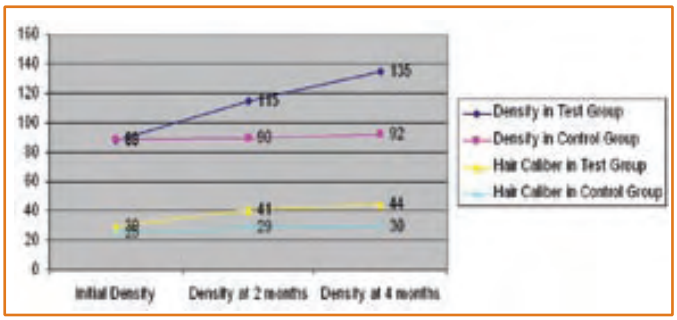


Figure 1. A: Miniaturization of hair; B: Miniaturization reversed with 4 months of cyclical medicine

Chart 1. Improved Hair Density and Caliber in Males



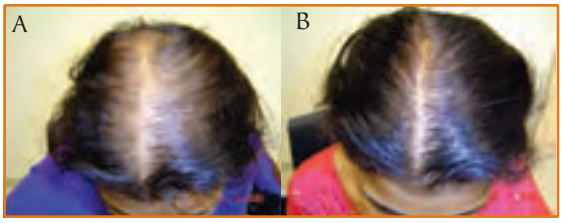


Figure 2. A: PCOD hair loss; B: PCOD hair loss response after 4 months of cyclical medicine

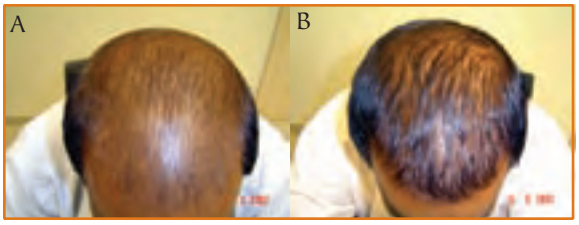
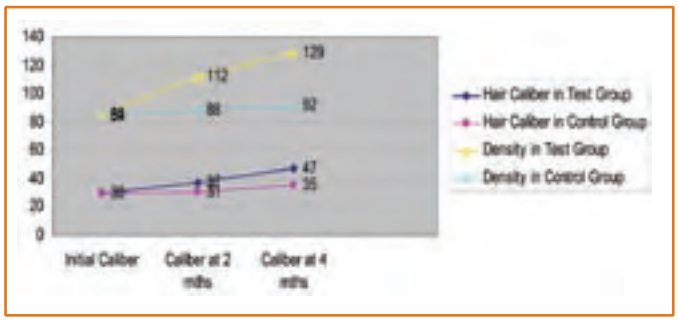


Figure 3. A: Miiaturization appearing as Grade VII; B: Miniaturization Reversed with 4mths of Cyclical Medicine to Grade III

Chart 2. Improved Hair Density and Caliber in Females



density improved by 4% at 2 months and 10% at 4 months; 56% of females had no improvement at 2 months. Caliber improved by 5% at 2 months and 19% at 4 months in the control group.

Patients responded to a self-assessment questionnaire at 4 months. In control Groups II and IV, 74% of patients said they looked the same. A few patients (3%) said that they had become worse than before. All patients in test Groups I and III felt that they saw new hair growth, the affected area was smaller, or friends and family noticed the difference. Some patients (1.5%) stopped treatment after noticing improvement at 4 months; they then noticed worsening of their hair condition in the next 3-6 months, and restarted treatment.

Serum DHT levels were studied initially and after 4 months. A daily dose of finasteride 1mg (Group II) induced a 12-54% DHT suppression (avg. 41%) after 4 months. Finasteride 1mg once every 3 days (Group I) achieved a 7-46% suppression of DHT levels (avg. 21%). The initial grade of hair loss and the improvement after treatment was not seen to be proportional to DHT levels. In our opinion, this may indicate that hair loss is multifactoral and even male pattern baldness requires other supportive treatments in addition to DHT suppression and minoxidil.

Two-year Follow-up

Two-year follow up showed that patients had further (24-63%) improvement in hair caliber over 2 years, and 39-156% further improvement in hair density. Thirty-four percent of the patients discontinued treatment for a short while and noticed increased hair loss 8-10 weeks after discontinuing treatment. All restarted treatment and regained their hair growth in the next 4 months. A small percentage (6%) of the group that restarted treatment felt the improvement was 5-10% less than what they had initially achieved.

Some Grades V and VI patients on cyclical therapy could achieve reversal of miniaturization to an extent, in our opinion, of not requiring a hair transplant (Figure 3, A and B).

The transplant team reported anecdotal observations about patients on cyclical medicine. They felt that these patients had follicles of better caliber, which were easy to dissect, easy to handle, and easy to implant. The transplanted hair growth started at 2½ instead of 4 months, and these patients did not have shock loss.

Complications

An irritation to minoxidil 2% solution application was seen in 0.8% patients. One percent of patients in the control group using 1mg finasteride daily reported loss of libido or decreased seminal volume in the first 8 weeks of therapy. This required reassurance and the symptoms improved as the treatment continued. No sexual side effects were, reported by any of the patients taking 1mg finasteride once every 3 days.

Discussion

It has been suggested that promoting hair growth requires supplementation of certain minerals, vitamins, amino acids, and antioxidants, as well as control of sebum secretion and antidandruff treatment.

There are drawbacks to using vitamins, minerals, and amino acids together. Excess of vitamin A and E lead to improper keratinization of hair and cause hair loss.[2] Absorption of minerals and vitamins is dependant on their relative deficiency in the body; iron and calcium given together reduce the absorption of one another.[9] We have addressed these problems by giving these components once every 3 days. A combination of two different drugs per day was used on a schedule that repeated every 3 days for one complete cycle of 4 months (Table 1). Contents and composition of these readily available over-the-counter preparations used are in Table 2. In female patients the same regimen was followed with 2% minoxidil but finasteride was omitted.[11] The combinations were easy to remember and followed the days of the week. The same drug combinations repeated on Monday/Thursday, Tuesday/Friday, and Wednesday/Saturday, with no medicine on Sundays. Minoxidil 2% was used every day[12] and 2% Ketoconazole plus Zinc pyrithione shampoo twice a week.

Finasteride has good receptor binding and 0.2mg finasteride per day can achieve 60% suppression of DHT levels suggesting that every 3 day dosing may be effective.[7]

Conclusion

Improvement in hair count, hair caliber, and control of hair loss was better with cyclical medicine than in the control groups. Improvement was noted in males and females in all age groups and grades of hair loss at 2 months and continued at 4 months. No patients reported any side effects of finasteride using the cyclical regimen. Pre-conditioning the hair with cyclical medicine before hair transplantation appeared to prevent shock loss, improve growth, and made the grafts easy to dissect and easy to implant.

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