

ISSN 2311-4673

Journal of Pharmacy and Pharmaceutical Sciences
(Volume 2, Issue 2, 2014)

Hair fall, Its Effective Available Treatments and Toxic Chemicals Associated with It

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ABSTRACT

Hair is the essential part of the human personality and a leading essential for self confidence and self esteem. To guard against its loss has ever been an important aspect. Alopecia is common problem in youngsters specially these days. The current study has been designed to survey and analyze some renowned market products which usually claim to stop or reduce hair fall to a good level. We have audit their active ingredients and researched to the account of their sudden downfall in market and reduced demand. Survey has been performed on different age groups to check and determine that which hair fall solution or treatment is on its peak and if it's effective in a way that what these products are claiming for. The survey has been conducted on a population of 200 people of different age groups including male and females (n=200). A statistical analysis is performed between effectiveness of different hair fall treatments. From the results of survey, here we can conclude that vitamins and protein tablets are the most adequate therapy for the hair fall instead of shampoos and different other medications. Herbal oils are more effective rather than medicinal or hair fall solution products because these solutions include hazardous chemical agent which somehow manages hair fall but effects natural growth process of hairs (hair regrowth cycle) and hence leads to hair fall again.

Keywords:

INTRODUCTION

The visual appearance of men and women is largely composed of hair¹. Hair comprised primarily of the protein keratin, which is also present in fingernails and toenails². Sulfur crosslink provide for the strength of the hair. Hair breakage can be caused by using different improper cosmetic techniques that can damage hair shaft, or cause disturbance in hair cycle.

Damage can also occur from normal dyeing, bleaching, waving or straightening³. Chemotherapy like antibodies may also induce alopecia in cancer

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patients which leads patient to refuse his therapy⁴. Statistically, hair fall is a problem that is affecting nearly 40 % of men and women universally⁵. Alopecia is a very common symptom, and more than one third of women around the world have significant hair loss during their lifespan⁶.

Hair loss by diffusion can affect both sexes of any age group⁷. Improper dietary intake, hormonal deficiency, environmental stress, psychological and social problems leads to hair fall. Hair loss, or alopecia, in women is often met with significant emotional distress, anxiety and menopause⁸. Dr. Camacho and their fellow colleagues have

observed depression in 55% of the women tendency who have Female Pattern Hair Loss (FPHL)⁹. Wilma Berg and co workers reported cause and triggers of hair fall which include a wide variety of physiologic or emotional stresses, endocrine imbalances and nutritional deficiencies or imbalance¹⁰. Marty and friends showed that the androgen receptors in males are in greater numbers leading to androgen type alopecia which is common in males¹¹. John P and coworkers revealed that breeding between normal mice having normal hair growth with the affected mice suffering from alopecia areata resulted in the breed or new generation with alopecia areata hence it proved that the disease is hereditary¹². Research history for treatment of alopecia also proved that herbs are also considered as useful treatment for this purpose Vishali Rathi gave his research about hair growth promoting herbs, which showed there positive results in rats. Hair growth and hair length were observed in rats after usage of herbs. Positive results provide us evidence that herbs and ayurvedic treatment can also be given to alopecia patients¹³. M. Hadshiew and colleagues provided the clue that stress is also a major cause of hair loss. From his experiment he proved that stress can exert profound hair growth-inhibitory catagen-inducing and hair-damaging pro-inflammatory effects¹⁴. For treatment of hair loss Rogaine (minoxidil) 5% is effective in men and not to be used by women¹⁵. Karrie T Amor and colleagues found that vitamin D and its receptors play major role in hair cycle and can be used in alopecia¹⁶. The Shampoos contains the ingredients amines or amino derivatives, particularly di- or triethanolamine, may form nitrosamines and react with nitrosating agent which form N-nitrisodiethanolamine and it is carcinogenic in nature¹⁷.

The aim of our research is to perform statistical analysis to compare effectiveness of certain treatments of hair fall which are popular in markets and claiming for reduced hair loss and to check the active ingredients of effective products which could be hazardous chemicals or effective herbs depending on their action, provided by the volunteers or consumers of those products.

METHODOLOGY

For analysis of male and female hair fall we have performed a survey on population of 200 people (n=200) amalgamated from places in Karachi who were hair fall victims. Volunteers were belonging to different age groups from 18-40 were analyzed. We took different parameters including hereditary, anemia, environmental factors and excessive use of chemical treatment on hair because these are the major factors which leads to hair damage and ultimately hair fall. We have investigated the hair fall products which our volunteers were commonly using for hair fall therapy.

We have statistically analyzed our results and plotted graphs of factors effecting Female Pattern of Hair Loss (FPHL) and Male Pattern of Hair Loss (MPHL), different age groups suffering from alopecia and in between different products used by volunteers.

RESULTS AND DISCUSSION

28% of the people are using hair fall solution sprays i.e. (Minoxidil, Romaine, Rogaine, Doctor) among them, Romaine and Doctor Hair fall solution are effective for a particular time period and then they increases the hair fall. However minoxidil is effective even it is left and gives positive result. 21% are using herbal product arnica, coconut oil, mustard seed oil and jojoba oil (fig1.1). Population for this survey includes 200 people which include male and female of different age groups. The problem of alopecia was found in most of young volunteers between age of 18-30(fig1.4). After analyzing our survey forms we got the results that 68% of men were suffering from inherited baldness(fig1.3) while 60% of women were facing hair fall problem due to inheritance(fig1.2), hence inheritance is the most common cause of baldness in men. In female 25% of volunteers were anemic while only 14% of male volunteers were anemic. Anemia is the major problem in women these days because of low iron intake which makes them deficient or anemic. Other factors that may cause hair fall according to our survey report were low

protein and iron intake, environmental factors including stress, salty water, excessive chemical treatment on hair and styling of hair with different methods such as dyes, straightening etc.

We have a “surprising” lack of understanding concerning the prevalence, incidence, causes, and how to effectively treat hair loss. The survey form was based on different questionnaire detailing scalp related information, family history, diseases or any other factor that may affect hair growth were also included in it.

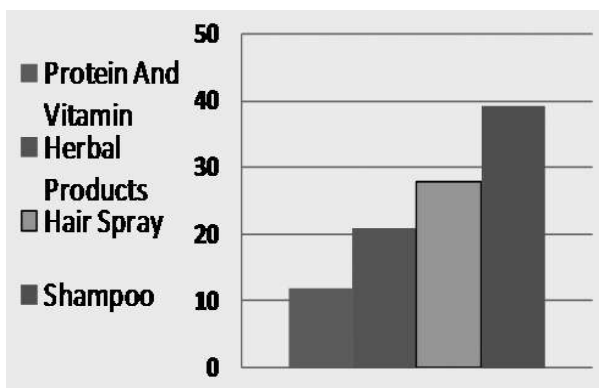


Figure 1.1: Products used for hair fall.

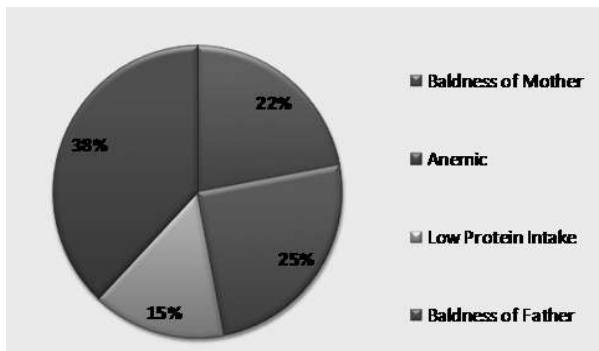


Figure 1.2: Factor effecting female.

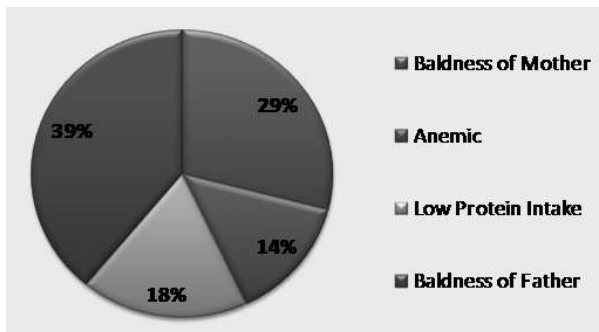


Figure 1.3: Factor effecting male

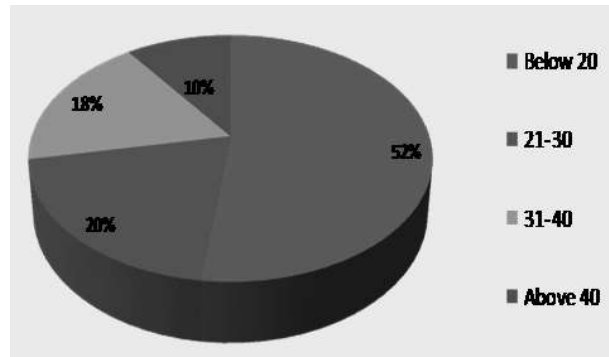


Figure 1.4: Age group victim of hair

In female the hair fall was mainly due to anemia, means they were deficient of iron in blood due to this the pale yellow color of body occur and the follicles weaker which leads to hair fall so the patients should increase the iron intake by consuming fish, dried fruits, legumes, meat, molasses, dark green leafy vegetables, potatoes, wheat germ, and grain products in the diet it will prevent the hair fall. But to be noted that the excessive intake of vitamin A can cause hair fall. In male, baldness was mainly due to hereditary either due to father or mother pattern baldness problem because the baldness is related by the genes changes. The hormone testosterone is converted into dihydrotestosterone which is the cause of hair fall. In hereditary hair fall, the follicles are smaller so due to this the hair growth is restricted normally. These types of baldness are treated by intake of Rogaine.

Some people take self-treatment for their hair fall, but they don't know about the duration, length and doing of treatment. They apply the product excessively because they don't know that every product is not effective for their hair, every individual have different hair types. These people continue or discontinue the treatment as much time as they want. Patient should consult to physician because if no sign of recovery seen in patient for 4 to 6 month then the treatment should be discontinued and an alternate therapy is used instead.

Minoxidil 2% are used both male and female while minoxidil 5% is contraindicated in female because it increases the facial hair growth. The minoxidil

actually absorbs by skin which increase the blood flow directly towards the follicles due to this it maintains hair growth.

We checked most of the hair fall shampoos that contain sodium lauryl sulphate, Diethanolamine(DEA) or Triethonalamine (TEA) used as a wetting agent in shampoos this agent may react with nitrites (manufacturer used it as preservatives) which is present in some shampoo , when these two chemicals reacts with each other it will cause cancer. It has wide toxicological profile and also can cause hair fall.

In current study, we studied and searched about active ingredients of few hair fall treatments like medicated sprays, tablets, shampoos and hair oils. In this research work we performed a survey which proved that among all practices to reduce hair loss, usage of protein and vitamin tablets are more efficacious and less toxic. So we found the active

ingredients in tablets like Rovigon and Hair vitamin tablets. Rovigon’s active ingredients are vitamin A and E. The active ingredients of Hair vitamin tablets are vitamin B and essential amino acids, which provide protein to the deficient individuals.

CONCLUSION

Hence we concluded from the above results ,that protein and vitamins are the best treatment for reducing hair fall in Pakistan though less volunteers were using it but survey proved that they provide prolonged and efficacious relief from hair fall. We also concluded that the hair fall shampoos which are most effective contain herbal ingredient or oil extracts like mustard oil. So instead of shampoos for hair fall it’s better to use oils which of course do not have any toxic element and among other hair sprays minoxidil is the conventional and most effective ingredient for hair growth.

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Table 1: Different parameters affecting hair fall

Gender	Percentage	Number
Male	18%	36
Female	82%	164
Factors Effecting On Hair Fall		
Anemic	39%	78
Low Protein	33%	66
Baldness of Mother	51%	102
Baldness of Father	77%	154
Product Use For Hair Fall		
Protein and Vitamin Tablets	12%	24
Hair Spray	28%	56
Shampoo	39%	78
Herbal Products	21%	42
Age Group Victim Due To Hair Fall		
Below 20	52%	104
21-30	20%	40
31-40	18%	36
Above 40	10%	20

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