Research & Reviews: Journal of Medicinal & Organic Chemistry

A review on Hair Loss & Damage

Akanksha Tyagi*

¹Department of Biotechnology, MIET, UPTU, Uttar Pradesh, India

Review Article

Received: 08/07/2016 Accepted: 11/08/2016 Published: 19/08/2016

*For Correspondence

Department of biotechnology, MIET, UPTU, UP, India E-Mail: akankshatyagi178@gmail.com

Keywords: Hair loss, autoimmune diseases, chemotherapy, androgenetic alopecia.

ABSTRACT

Hair loss (Male pattern baldness), also called alopecia, which refers hair loss from the head or body. Male pattern baldness and hypotrichosis have numerous causes including androgenetic alopecia, contagious contamination, injury (e.g. because of radiotherapy, chemotherapy, nourishing deficiency (e.g., iron deficiency), and autoimmune diseases (e.g., alopecia areata) [1-7]. Male pattern baldness seriousness happens over a range with amazing cases including alopecia totalis (loss of hair on the head) and alopecia universalis (loss of hair on the head and body). Different methods to prevent hair loss and its causes we will discuss in this article.

INTRODUCTION

Hair loss (Alopecia) is the most troubling symptoms of chemotherapy in cancer patients. Chemotherapy as a disease treatment regularly prompts halfway or complete balding (alopecia). It is a standout amongst the most upsetting and traumatic symptoms of cancer treatment. It causes mental stress; negative effect on self-perception, self-regard and social relations, which may prompt treatment dismissal by a few patients [8-12]. The skin and hairform the main boundary presented to contamination. Vast suspended molecule, little airborne particles, smoke and vaporous contamination settle on the scalp and hair, bringing about disturbance and harm.

CAUSES

Androgenic alopecia

Designed balding allude as androgenetic alopecia (AGA), is a genetic androgen subordinate issue portrayed by a dynamic procedure that causes a steady transformation of terminal hair into scaled down hair characterized by different examples. AGA is a condition of hyperandrogenemia. It happens because of transaction between different hormones like Total testosterone, Sexual hormone restricting globulin, Dihydroepiandrosterone (DHEAS), Leutinizing hormone and Follicle fortifying hormone [13-14].

Infection

Infection is occur due to Dissecting cellulitis, Fungal infections (such as tinea capitis), Folliculitis, Secondary syphilis. Demodex folliculorum, a tiny bug that encourages on the sebum created by the sebaceous organs, denies hair crucial supplements and can bring about diminishing. Demodex folliculorum is not present on every scalp and will probably live in a oily scalp environment [15-16].

Drugs

Temporary or permanent hair loss can be caused by using several medicines, including those for pulse issues, diabetes, coronary illness and cholesterol Any that influence the body's hormone balance can have a declared impact: incorporate the contraceptive pill, hormone substitution treatment, steroids and skin inflammation medications [17-20]. The symptoms from medications, including chemotherapy, anabolic steroids, and anticonception medication pills)

Pregnancy

Pregnancy is one of the reasons for hair loss, Baldness regularly takes after childbirth without bringing about baldness. In this circumstance, the hair is really thicker amid pregnancy because of expanded coursing oestrogens. After the child is conceived, the estrogen levels fall back to ordinary prepregnancy levels, and the extra hair foliage drops out. A comparable circumstance happens in ladies taking the fertility-stimulating medicine clomiphene.

METHODS

Pull test

Pull test assesses diffuse scalp hair loss. Tender footing is applied on a group of hairs (around 40–60) on three distinct regions of the scalp. The quantity of extricated hairs is checked and inspected under a magnifying instrument (microscope). Typically, less than three hairs for every region should come out with every pull. In the event that more than ten hairs are obtained, the Pull test is viewed as positive [21].

The pluck test is directed by pulling hair out "by the roots". The foundation of the plucked hair is inspected under a magnifying instrument to decide the period of development, and is utilized to analyze an imperfection of telogen, anagen, or systemic malady. Telogen hairs have little bulbs without sheaths at their roots. Telogen effluvium demonstrates an expanded rate of hairs upon examination. Anagen hairs have sheaths appended to their roots [22]. Anagen effluvium demonstrates a decrease in telogen-stage hairs and an expanded number of broken hairs[23].

Scalp biopsy

Scalp biopsy is utilized when the diagnosis is uncertain; a biopsy takes into consideration varying amongst scarring and nonscarring frames[22-25]. Hair tests are taken from zones of inflammation, for the most part around the border of the uncovered patch[26-33].

Trichoscopy

Trichoscopy is a noninvasive method of examining hair and scalp. The test may be performed with the use of a dermoscope or a video dermoscope. It allows differential diagnosis of hair loss in most cases [34-39].

Three medicines have proof to bolster their utilization in male pattern baldness: finasteride, dutasteride and minoxidil. They normally work better to counteract further male pattern baldness than to regrow lost hair.

Topical minoxidil and finasteride (5α reductase sort II inhibitor) are the main FDA endorsed medications for male pattern baldness. Both operators capture movement of male pattern baldness and animate incomplete hair regrowth. A few different medications are likewise utilized off-mark and a plenty of novel medicines with halfway substantiated hair development cases are making advances in trichologists' solutions. In this way, the information of these alternative drugs, their component, measurements convention and unfavorable impacts is critical for now's honing dermato-trichologist.

Minoxidil (Rogaine) is a nonprescription drug endorsed for hair loss and alopecia areata. Available in both form (liquid or foam), it is rubbed into the scalp twice per day. This is not applicable for all people. The more extended the hair has quit developing, the more outlandish minoxidil will regrow hair. Minoxidil is not effective for different reasons for balding. Hair regrowth can take 1 to 6 months to start. Treatment must be proceeded with uncertainly. In the event that the treatment is halted, hair loss resumes. The side effects are scalp irritation, unfavorably susceptible contact dermatitis, growth of unwanted hair in different parts of the body [40-44].

Finasteride (Propecia) is available in pill form, taken 1 milligram for every day. It is not showed for ladies and is not prescribed in pregnant ladies. Treatment is viable beginning inside 6 weeks of treatment. Finasteride causes an expansion in hair maintenance, the heaviness of hair, and some increment in regrowth. Symptoms in around 2% of guys, incorporate diminished sex drive, erectile brokenness, and ejaculatory brokenness. Treatment should be proceeded the length of positive results happen. When treatment is ceased, balding resumes[45-50].

REFERENCES

- 1. Alhomaid MH(2016) Escitalopram Induced Hair Loss. J Psychiatry. 19:352.
- 2. Brodin M (1987) Drug-related alopecia. DermatolClin. 5:571.
- 3. Mckinney PA, et al.(1996) Alopecia and mood stabilizer therapy. Ann clin Psychiatry. 8:183.
- 4. Kubota T, et al.(1994) Alopecia aerate associated with haloperidol. Jpn. J Psychiatry Neurol. 48:579.
- 5. Ghanizadeh A (2008) Sertaline-associated hair loss. J Drugs Dermatol. 7:693.
- 6. Jenike MA (1991) Severe hair loss associated with fluoxetine use. Am J Psychiatry. 148:392.
- 7. Bourgeois JA (1996) Two cases of hair loss after sertraline use. J ClinPsychopharmacol.16:91.

- 8. Rajput R (2015) Understanding Hair Loss due to Air Pollution and the Approach to Management. Hair Ther Transplant. 5:133.
- 9. Shapiro LJ and Shapiro DB (2015) Low Anabolic Profile in Assessing a Patient's Overall Hair Loss. Hair Ther Transplant. 5:130.
- 10. Sheikholeslami M, et al. (2015) Site-Dependence Scalp Cooling System to Prevent Hair Loss during Chemotherapy. J Bioengineer & Biomedical Sci. 5:158.
- 11. Tas B, Basaran K and Pilanci O (2014) Neonatal Occipito-Linear and Temporo-Fronto-Parietal Alopecia: Can Non-Marginal and Marginal forms of the Transient Neonatal Hair Loss be Found Together? Hair Ther Transplant. 4:119.
- 12. Cakir E (2013) The Association between Metabolic Syndrome Components and Hair Loss both Male and Female Individuals. Hair Ther Transplant. 3:110.
- 13. Sonthalia S, et al. Hair Restoration in Androgenetic Alopecia: Looking Beyond Minoxidil, Finasteride and Hair Transplantation. J Cosmo Trichol. 2016;2:105.
- 14. Sanke S, et al. (2016) Free Androgen Index (FAI): Marker of Premature Androgenetic Alopecia in Men. J Microb Biochem Technol. 8:097.
- 15. Kubo Y, et al.(2016) Interventional Evaluation of Monoammonium Glycyrrhizinate-Glycine/DLMethionine Combination Tablets in Mild Alopecia Areata. J Clin Exp Dermatol Res. 7: 322.
- 16. Blatt J, et al. Single-Unit Elevation of the Scalp, Skull, and Dura: A Modification of the Classic Osteoplastic Flap. J Neurol Disord. 2016;4: 268.
- 17. Karaca S and Inci R. Psoriasis: as an Imitation of Skin, Scalp and Nail Infections. J Infect Dis Ther. 2016;4: 274.
- 18. Marcovici G Hair Loss Treatment Shows Anti-inflammatory Activity in vitro. Hair: Therap Transplant. 2012;2: 103.
- 19. Mansilla E, et al. Building Small Spheroids/Regenerative Units for Hair Loss Treatment: Just Imitating Nature in an Industrialized Manner. Hair: Therap Transplantat 2011;1: e101.
- 20. Cakir E. The Association between Metabolic Syndrome Components and Hair Loss both Male and Female Individuals. Hair Ther Transplant 2013;3: 110.
- 21. Jacob S and Admani S. The 'Pull Test' Delineation of Irritant Patch Test Reactions. J Clin Exp Dermatol Res. 2014;5: e104.

- 22. Ibrahem MK, et al. Estimation of Serum Ferritin Level in Female Patients with Telogen Effluvium. Hair Ther Transplant. 2012;2: 104.
- 23. De Almeida IB, et al. Estrogen and Transdiagnostics: A Systematic Review. J Depress Anxiety. 2016;5: 228.
- 24. Urata R, et al. Scalp-recorded-EEG-based BFCN for Diagnosing AD and FTD Patients and Observing their Prognoses: Preliminary Results. J Comput Sci Syst Biol. 2016;9: 038.
- 25. Sowa Y and Numajiri T. Reconstruction of Larger Nasal Defects using Tip Divided-Scalping Forehead Flap. J Tissue Sci Eng. 2016;7: 166.
- 26. Grimalt R. "Alopecic and Aseptic Nodules of the Scalp" and "Pseudocyst of the Scalp": 2 Different Conditions or One SingleEntity?. J Cosmo Trichol. 2016;2: 106.
- 27. Liuzzi J et al. Extensive Intracranial Invasion of a Basal Cell Carcinoma of the Scalp. Arch Surg Oncol. 2015;1: 105.
- 28. Francisco JL, et al. Multifocal Angiosarcoma of the Scalp: Review of the Literature and Report of Two Cases. J Tumor Diag Rep. 2015;1: 103.
- 29. Kun Hou. Cerebral Abscess Secondary to Mild Scalp Infection: A Case Report and Literature Review. J Neuroinfect Dis. 2015;6: 177.
- 30. Dipankar P, et al. Chronic Arsenicosis with Basal Cell Carcinoma of Scalp: A Rare Co-incidence. Trop Med Surg. 2015;3: I102.
- 31. Sheikholeslami M, et al. Site-Dependence Scalp Cooling System to Prevent Hair Loss during Chemotherapy. J Bioengineer & Biomedical Sci. 2015;5: 158.
- 32. Ibrahim T, et al. Efficacy of a Silicon Based Continuous Scalp Cooling System with Thermostat on Chemotherapy Induced Alopecia. J Palliat Care Med. 2015;5: 209.
- 33. Aly DG. Hair: A Review of Prominent Scalp Hair Changes throughout a Females' Life. Pigmentary Disorders. 2014;1: 137.
- 34. Al-Awadeen MA, et al. Determination of Selected Heavy Metal Levels in Scalp Hair and Fingernail Samples from Dental Laboratory Technicians. J Interdiscipl Med Dent Sci. 2014;2: 138.
- 35. Anbar TS, et al. Erythroderma, Scaly Scalp and Nail Dystrophy: A Misleading Association. J Clin Exp Dermatol Res. 2014;5: 219.
- 36. Yilmaz H, et al. Closure of the Cystic Duct: Comparison to Harmonic Scalpel Versus Clip Application in Single Incision Laparoscopic Cholecystectomy. J Gastroint Dig Syst. 2014;4: 165.

- 37. Ito E, et al. Survival Analysis of Scalp Angiosarcoma Patients for Treatment Modalities in our Hospital Over the Past 28 Years. J Clin Exp Dermatol Res. 2014;5: 202.
- 38. Graan LAV, et al. Scalp and Intracranial EEGfMRI in Epilepsy. J Neurol Neurophysiol. 2013;4: 156.
- 39. Saleh M, et al. Impact of Ultrasonically Activated Scalpel on Thyroid Surgery. J Def Manag. (2013;S3: 007.
- 40. Sheikh S, et al. A New Topical Formulation of Minoxidil and Finasteride Improves Hair Growth in Men with Androgenetic Alopecia. J Clin Exp Dermatol Res. 2015;6: 253.
- 41. Thuangtong R, et al. A Pilot Study of the Efficacy in Treatment of Female Pattern Hair Loss using 5% Minoxidil Solution Combined with Oral Chelated Zinc Supplement. Hair Ther Transplant. 2013;4: 113.
- 42. Debar S, et al. The Novel Excipient, Dodecyl-2-N, N-dimethylaminopropionate Hydrochloride (DDAIP-HCI) Improves the Flux of Minoxidil in Human Skin. Hair Ther Transplant. 2012;2: 105.
- 43. Ahmed SM and Elbashir AA. Development and Validation of Spectrophotometric Method for Determination of Finasteride in Pharmaceutical Formulation Using 1,2-Naphthoquine-4-sulfonate (NQS). J Anal Bioanal Tech. 2015;6: 247.
- 44. Ahn KH, et al. Pregnancy Outcomes with Paternal Exposure to Finasteride, a Synthetic 5- Alpha-Reductase Inhibitor: A Case Series. J Clin Toxicol. 2015;5: 248.
- 45. Takeda A, et al. CG210 Enables Finasteride 1mg Users to Further Improve Hair Pattern: A Randomized, Double-Blind, Placebo-Controlled Pilot Study of a Novel Product. Hair Ther Transplant. 2013;3: 107.
- 46. Budavari S.The Merck Index, 14th Ed. Merck and Co. Inc., White House station, NJ. 1996
- 47. Macek J. Separation of finasteride and analogues. J Chromatogr B. 2001;764: 207.
- 48. Akheel AS, et al. J of Pharma Biomed. 2001;25: 1015.
- 49. Ulu ST. A new spectrophotometric method for the determination of finasteride in tablets. Spectrochimica Acta Part A. 2007;67:778.
- 50. Bari SB, et al. HPTLC Method Validation for simultaneous determination of Tamsulosin Hydrochloride and Finasteride in Bulk and Pharmaceutical Dosage Form. J Anal Bioanal Tech. 2011;2:119.