

RETROSPECTIVE OF TREATMENT FORMS AGAINST ANDROGENIC ALOPECIA

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Abstract: Androgenic Alopecia is a pathology that affects a significant percentage of the population. The search for forms of treatment arises from the need for acceptance or to achieve the beauty standards required in society, whether as a definitive or temporary treatment. This is a retrospective through the analysis of digitally collected data on the development of forms of treatment against androgenic

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alopecia. Using a basic, descriptive research, carried out using bibliographic and documentary data. The longitudinal research on the development of techniques and the use of published methods, aims at delineating the treatment against AGA.

Keyword: treatment, androgenic alopecia

INTRODUCTION

Over the centuries, shape, body and silhouette have always been the target of human desire, such as a slender shape, light eyes and long, shiny hair. Such a cliché grew and became something intangible.

Man over the decades, uses products that within empiricism believed to be the elixir of youth, but what has been proven that many of these principles are toxic and unhealthy and the desire for perfect beauty becomes a utopia, but the initiation of scientific research of products that are really effective in the desire for this ideation is the path that must be followed.

Hair throughout history comes with specific morphological characteristics and mainly culturally as in ancient Egypt where Cleopatra already used essential oils, hairstyles and adornments in her long hair as a symbolism of power, cultural acceptance and point of seduction to her various partners.

Hair care has been growing exponentially as the most effective treatment to combat alopecia, white hair and hair growth as quickly as possible

Androgenetic Alopecia is a chronic dermatological disorder, which occurs in genetically predisposed people due to the hypersensitivity of testosterone in the hair follicles of the scalp. The androgenic action gradually reduces the hair follicle and causes early alternation between phases of the hair cycle

The object of study is a bibliographic research of a simple nature with the purpose of outlining the different techniques over the last few years against alopecia



Hair anatomy

A review of the capillary anatomy is presented so that the understanding of the formation and structure of the capillary is the focus of the search for success in the domain from germinal formation to finitude, from the anatomical understanding it is possible to understand the forms of treatment.

Hair development: a histological look

The skin (complexion, integument) and its derivatives make up the integumentary system. The skin forms the outer covering of the body and is its largest organ, constituting 15% to 20% of its total mass. The skin consists of two main layers:

- Epidermis, composed of a flattened and cornified stratified epithelium that grows continuously, but maintains its normal thickness due to the desquamation process. The epidermis derives from the ectoderm.
- Dermis, composed of a dense connective tissue that provides mechanical support, strength and thickness to the skin. The dermis derives from the mesoderm.

The hypodermis contains varying amounts of adipose tissue organized into lobules separated by connective tissue septa. It lies deeper than the dermis and is equivalent to the anatomist's subcutaneous fascia.

In people who are well-nourished and live in cold climates, fat tissue can be quite thick. The epidermal derivatives of the skin (cutaneous appendages) comprise the following integumentary structures and products:



- Hair follicles and hair;
- Sweat glands;
- Sebaceous glands
- Mammary glands

The integumentary system fulfills essential functions related to its location on the external surface. The skin and its appendages are a complex organ made up of many different cell types. The diversity of these cells and their ability to work together provide many functions that allow a person to cope with the external environment. The main functions of the skin are as follows:

It acts as a barrier that protects against physical, chemical, and biological agents from the external environment (i.e., mechanical barrier, permeability barrier, ultraviolet barrier).

Provides immunological information obtained during the processing of antigens for cells appropriate effectors in the lymphatic tissue.

It participates in homeostasis by regulating body temperature and water loss. (HARRIS, 2009; ALEXANDER et al., 2012).

METHODOLOGICAL PROCEDURES

This article is a basic descriptive research, carried out through bibliographic and documentary data.

Lakatos and Marconi (1990) define research in stages using a method of reflective thinking, which requires a scientific treatment. Gil (2010) follows this same line of thought, stating that research is carried out through accessible knowledge with the use of investigation methods and techniques, involving several stages. Therefore, a documentary research has the need for a systematization of data collection in order to provide a concise content in its investigation, which can be a historical retrospective, or even the filing of related subjects.

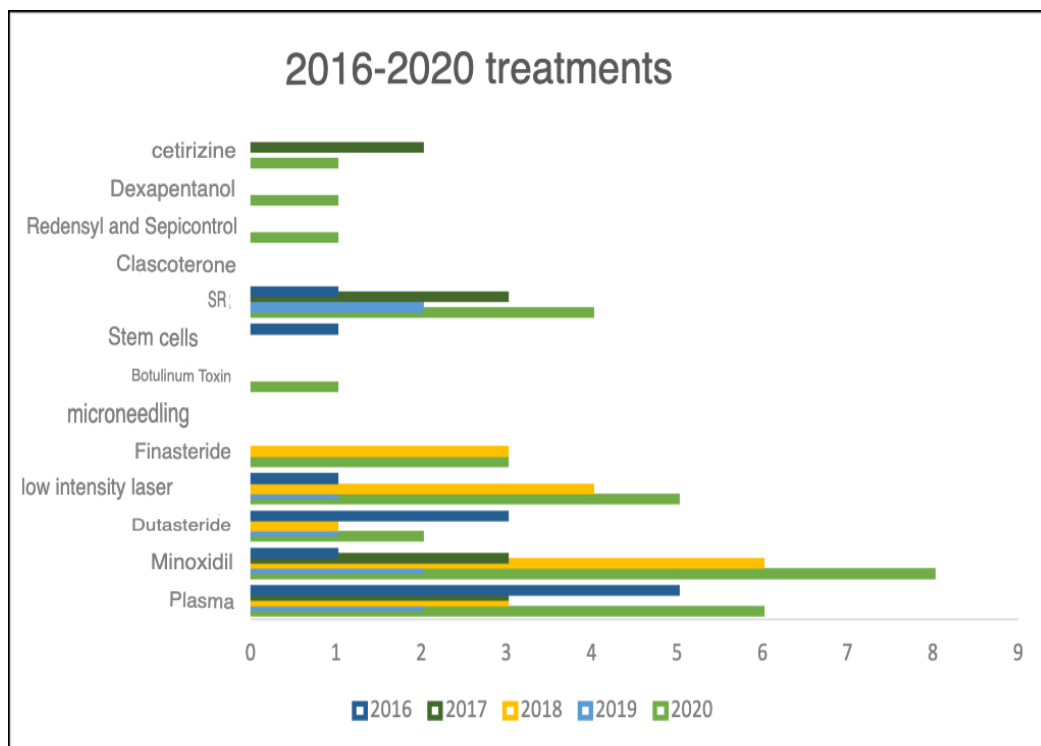


The proposed theme reviewed 85 scientific articles published digitally in a database where data collection was systematically carried out using keywords “treatment”, “alopecia”, “androgenic” between the years 2016 and 2020, with the objective of outlining the most discussed forms of treatment in the last 5 years.

Discussion of data

In an analysis of the years researched, several forms of treatment were observed, such as Minoxidil, either 2 or 5%, in intradermal or topical form, use of platelet-rich plasma, microneedling, finasteride, dutasteride, among other items found

After listing the 85 articles annually, it was later ordered by forms of treatment, to carry out a historical analysis.



Data analysis

The Table above shows the forms of treatment found between the years 2016-2020 in a database where the main forms published in those years were classified, including Minoxidil, platelet-rich plasma, low-level laser, and others.

The first item of greatest relevance in the articles investigated was the use of Minoxidil, where it was initially developed to act as an antihypertensive drug.

In this function, its form of action is well known, occurring through vasodilation and the opening of potassium channels. Hypertensive patients treated with Minoxidil developed hypertrichosis (increased hair volume). From this data, it was found that it promotes hair growth.

Its mechanism of action at the capillary level is not yet fully known, and vasodilation is not the main stimulus factor. What is already known is that Minoxidil affects the hair cycle. It promotes an increase in the duration of the anagen phase, stimulates cell proliferation in the dermal papilla, generates an increase in the diameter of hair shafts and an increase in the size of follicles, stimulates vascular growth factor (VEGF) and prostaglandin synthesis, inhibits collagen synthesis, consequently increasing the number of hairs per cm². (ABCRC, 2021)

The second item was platelet-rich plasma where PRP is a biological product produced from an autologous blood centrifugation process, allowing the extraction of a plasma with a concentration of three to five times higher of platelets in relation to their quantity in basal blood. Many researches developed in the most diverse areas of Medicine, especially in dentistry, orthopedics and reconstructive surgery, have suggested that the product enhances the tissue healing process at the site where it is applied, through the release of biological mediators called growth factors (Aleixo et al, 2017)

PRP is an inexpensive and efficient method of preparing platelet- and growth-factor-rich plasma.

Borzini and Mazzucco (2007) argue in their literature review article that, among hundreds of published studies on the clinical use of platelet derivatives, very few belong to the class of prospective



randomized clinical trials or to the category of retrospective clinical trials. The vast majority of published works belong to the category of case reports or pilot studies. Despite this lack of randomized controlled trial studies, the authors cite that, by carefully analyzing the published papers, there is strong evidence that platelet gel (PRP) is clinically effective.

The third find in this timeline was the low-level laser.

Low-level lasers promote beneficial biological effects, of an analgesic, anti-inflammatory and healing nature, through a phenomenon of biostimulation (Lins, RDAU et al, 2010)

The incorporation of the laser as a therapeutic instrument has been followed in the biomedical field since 1960, through Theodore Maiman, and one of the first published experiments on the effects of low-level laser dates back to 1983, through the irradiation of HeNe (Helium-Neon) laser, on rat wounds for 14 consecutive days. The effects of low-level laser can be observed in the behavior of lymphocytes, increasing their proliferation and activation; on macrophages, increasing phagocytosis; increasing the secretion of fibroblast growth factors and intensifying the reabsorption of both fibrin and collagen. (Andrade, et al, 2014)

The effects of low-level laser can be observed in the behavior of lymphocytes, increasing their proliferation and activation; on macrophages, increasing phagocytosis; increasing the secretion of fibroblast growth factors and intensifying the reabsorption of both fibrin and collagen. In addition, they contribute to increase the motility of epithelial cells, the amount of granulation tissue, and can decrease the synthesis of inflammatory mediators. (Andrade FSSD et al, 2012)

Finasteride, a synthetic steroid, systemic hormone blocker, has been used for the treatment of AGA in men since 1997 (Mulinari-Brenne, Soares, 2009)

Dutasteride is a type 1 and 2 5α -Reductase inhibitor, and also acts to reduce the amount of DHT more effectively than finasteride, decreasing DHT levels by up to 90%. In addition, dutasteride is a good alternative for cases in which finasteride has proven to be ineffective and is capable of generating a greater increase in the number of hairs than finasteride. (Chaves et al, 2021)



Final Considerations

This research can offer the academic community and health professionals subsidies to achieve practical success in the development of the treatment against androgenic alopecia.

In view of the proposed objective, it is possible to draw a timeline of the main forms of treatment against AGA,

The bibliographic retrospective presented in this study makes us reflect on how important hair is, not only in the pathological sphere, but in the well-being of the individual.

The study shows that from 2016 onwards there was a growth in techniques in the fight against AGA, whether they were innovative or simply improved

Many of the techniques analyzed were used in conjunction with other manipulations to combat alopecia.

As it has also been shown that PRP (platelet-rich plasma) is an instrument of use that has its potential against baldness, either through its regeneration factor and growth in the hair bulb.

Just as Minoxidil in its various concentrations, even in initial studies being developed in the fight against hypertension, has been demonstrating effective results against alopecia, as well as the low-frequency laser, even though it is a line of less investigation, proves its effectiveness.

The look at the human being must be in its entirety as a Bio-Psychic-Social being and when dealing with androgenic alopecia, these aspects cannot be forgotten since it is a pathology that is directly related to the general well-being of the individual. The treatment of AGA is not only aesthetic, but also intrinsic factors such as self-esteem and acceptance.

The concreteness of the theme addressed makes the next researchers broaden their prism of scientific knowledge against androgenic alopecia and promoting greater scientific technical knowledge in the forms of treatment against androgenic alopecia.



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