

ANDROGENETIC ALOPECIA:
Exploring causes, psychological effects, with Western and Chinese Medicine approach

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ABSTRACT

Androgenetic alopecia, commonly referred to as male pattern balding, is the slow progressive loss of head hair in a distinct pattern, sometimes to the extent of baldness. Androgenetic alopecia affects 40 million men and 20 million women in the US. Androgenetic alopecia has significant psychological effects ranging from low self-esteem, depression, worry, negative self-image, limited sexual activity, to fearing that your future is out of control and hopeless. Though its cause is not definitively known, from either a Western or Chinese modality, there are various studies that suggest that psychological support, lifestyle, diet, and exercise changes are necessary in the prevention and treatment of androgenetic alopecia, regardless of which modality you use for diagnosis. Proper public education can show that Western prescriptive medicines for androgenetic alopecia (Finasteride and Minoxidil) attempt to remedy the body by decreasing the amount of dihydrotestosterone (DHT) to increase the amount of head hair the same way preventative changes would have worked if followed through life. Preventative lifestyle changes that decrease the amount of DHT in your body and maintain hair count include daily vigorous exercise, low fat and caloric diet, decreased stress, and decreased sugar intake. Studies in Traditional Chinese medicine (TCM) address androgenetic alopecia through possible causes: heat/fire giving rise to wind; qi/blood stasis in the local channels; and, deficiency of qi, blood, and essence failing to nourish the hair. There is a potential important correlation between the kidneys in both Western and Chinese medicines. This paper will focus on causes, diagnosis, psychological effects, and Western and Traditional Chinese therapies in both male and female androgenetic alopecia.

Introduction

Androgenetic alopecia, a common dermatologic condition also known as male pattern baldness, has been studied for the past century. Despite the longevity of research, there has been a lack of understanding of the condition as well as a lack of effective therapies. This is perhaps due to insufficient early education and lack of use of non-pharmaceutical remedies.

Thought more of as a common effect of aging, androgenetic alopecia is being recognized as a condition with significant effects including severe psychological stresses, depression, negative self-image and outside perceptions. [1][2] There is an important link between hair and identity, especially for women. Western and Chinese medicine have unique pattern differentiation with effective pharmaceuticals and systemic and local acupuncture treatments. [3][4]

Pathogenesis

Androgenetic alopecia is most prevalent in the United States, affecting 40 million men: 30% of men by the age of 30, 50% of men by the age of 50 and 80% of men by the age of 70.[5] The incidence and the severity of androgenetic alopecia tend to be highest in Caucasians, second highest in Asians and African Americans, and lowest in Native Americans and Eskimos. Caucasians are four times more likely to develop baldness than African Americans. [1][6][7] Androgenetic alopecia affects 20 million women in the US: 15% of women before menopause and 50% of women at menopause. [3][6][7]

Male pattern baldness typically begins above both temples and thins at the crown of the head. There is usually a rim of hair at the sides and rear left. Sometimes, it can progress to complete baldness. The Norwood–Hamilton scale of male pattern baldness shows the typical pattern of hair loss is divided into seven categories (Figure 1)[8]. Type 1 shows no hair loss. Type II shows minor recession of the frontal hairline. Type III indicates further frontal loss, and is considered ‘cosmetically significant.’ The subset of type III, termed ‘III vertex’, shows significant frontal recession coupled with hair loss from the vertex region of the scalp. Types IV–VI show further frontal and vertex loss, culminating in type VII, in which only the occipital scalp region maintains significant amounts of hair.

Female pattern baldness typically causes hair to thin all over the head, the hairline does not recede, and it rarely leads to total baldness. The Ludwig scale shows the typical patterns for women (Figure 2) [9]. Type I shows a general thinning at the center part, type II shows thinning progressing to the crown of the head, and type III shows nearly full hair loss at the crown. Advanced stage leaves no hair on the top of the head. Frontal thinning is a classified front region of hair loss and is in the area where the forehead meets the female's hairline.

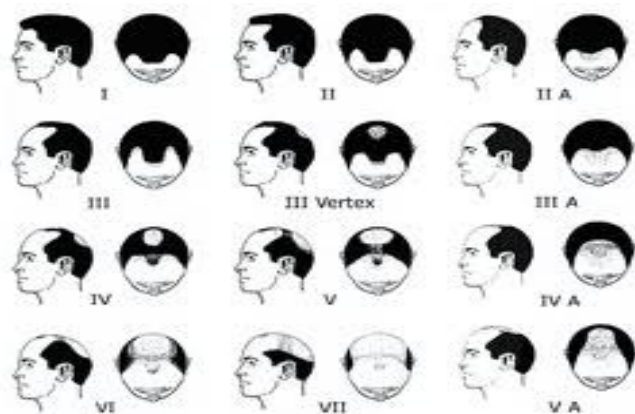


Fig. 1

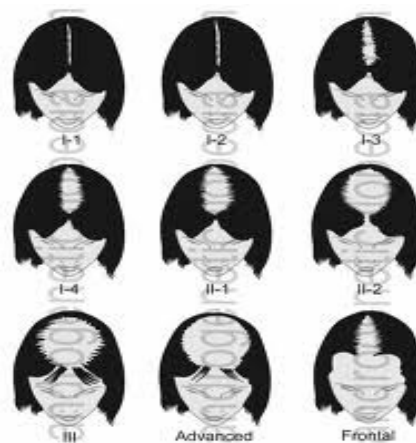


Fig. 2

Psychological effects

Androgenetic alopecia has few physically harmful effects but may lead to psychological stresses, including high levels of anxiety and depression. While hair loss affects some greatly, others are not concerned about the condition and do not seek treatment or advice. There are two key branches in understanding the emotional impact of hair loss. One includes the interaction and reaction of people based on perceptions of human appearance and the negative stereotype of balding. The other relates to the self-esteem from the individual's own perception of body image. [2] In general, hair is an important determinant of physical attractiveness and a means of expressing individuality.[1] Hair loss is regarded by others as negative. Throughout history, abundant hair has symbolized vitality, health, virility; the loss of hair can connote conquering, loss of individuality, impotency, and/or weakness.[1] Monks would shave their heads for religious penitence and to possibly make themselves unattractive to the opposite sex. Native Americans would scalp their enemy to take possession of the spirit and strength. In art and film, evil characters are often portrayed as bald. In the Bible, hair is the source of Samson's strength. European royalty and courtrooms use wigs to convey high power and status. [2]

Factors associated with a greater psychological effect on men include hair loss at a young age, not being in a romantic relationship, relying on physical appearance as a source of self-esteem, and having preexisting poor self-esteem.[1] In studies comparing individuals' initial impressions to sketches or photographs of balding compared with non-balding men, balding men were consistently rated as less physically and socially attractive, older, less likeable, and less virile.[1] Studies of men are conflicting. Some studies report minor social concerns but normal self-esteem and psychological profiles. Others address that hair loss is very stressful and causes diminished feelings of attractiveness and social functioning, lower self-esteem and body image, and increased stress.[10]

There is one theory that baldness evolved in males through sexual selection as an enhanced sign of aging and maturity. Bald men are seen as less aggressive and risk-taking and are more able to nurture and raise offspring. One study compared facial and cranial hair with social perceptions. The more bald the male, the more socially mature he appeared.[11]

The psychological effect of hair loss for women seems to be taken at a deeper personal level. Women, more than men, have a significant psychological investment in their appearance. They are more particular about the way other people perceive them and are likely to react stronger to events such as hair loss that they regard as changing their appearance for the worse. With a loss of hair women tend to find a loss in self worth, self-esteem, and are ashamed.[12][10] Women often perceive that hair loss is not taken seriously by family and friends. They have less of a support network and the hair loss is not diffused with humor as it is commonly done with males. Hundreds of women filled out a questionnaire by hair loss specialty dermatologist, Dr. David Kingsley PhD, that addressed the effects of hair loss. They reported: loss of self-esteem, depression, worry, frustration, anxiety, envy, concern, helplessness, self-conscious, lack of control, lack of support, uncomfortable in social situations, negative self-image, limited sexual activity, and a fear that hair loss will negatively affect career/marriage/future relationships. [13][14][10]

Western Medicine Approach

In Western medicine, androgenetic alopecia is known to depend on androgens, particularly dihydrotestosterone (DHT). Dihydrotestosterone is synthesized from testosterone by 5 α -reductase. There is much support for the evidence of the role of androgens (especially DHT). Androgenetic alopecia is linked to hair follicles with receptor sites for DHT. Higher concentration of DHT shuts down the follicles, causing them to produce fine, white hair. Over time, the lifespan of follicles

diminishes and hair cannot be produced normally. Simply put: more DHT, less hair. In Figure 3, dermoscopic photography shows the difference in follicle size.[15] Normal scalp is made of predominately of full-thickness, healthy terminal hair with relatively uniform diameter of the hair shafts. Androgenic alopecia scalp shows that many hairs have decreased in diameter (miniaturized).



Fig. 3

Normal

Androgenic Alopecia

Men with androgenetic alopecia typically have higher levels of 5α -reductase, lower levels of total testosterone, higher levels of free testosterone, and higher levels of total free androgens, including DHT. [16] Androgenetic alopecia is not observed in castrated men who lack androgens; in individuals who lack functional androgen receptors; or in pseudo-hermaphrodites who lack 5α -reductase. The absence of baldness in those lacking the gene for 5α -reductase suggests a necessary role for DHT. The progression of androgenetic alopecia in men is halted at the time of castration among post-pubertal men. [7] As well, balding scalps contain excessive concentrations of 5α -reductase, DHT, and the androgen receptor. Studies show that hair loss is slowed down or inhibited by Finasteride (Propecia), a medication that prevents the conversion of testosterone to DHT by selectively inhibiting the activity of 5α -reductase.[17]

Androgenetic alopecia in men appears to be inherited, but the mode of inheritance is not yet understood. The theory that baldness is an X-linked trait from the maternal side was primarily based on one study conducted in 1916. This gave rise to the folklore that has been passed down for generations that baldness is linked to the maternal side of the family, causing much stress on adolescent boys. In 2005 Nöthen et al[18] began research on the genetics of bald men. The study consisted of several hundred balding and non-balding men. He compared their androgen receptor genes which are located on the X chromosome. They discovered that the balding men have a particular version of the androgen receptor genes. The conclusion was that a genetic variation triggers baldness. Further studies have not entirely supported that evidence. Current studies hypothesize inheritance due to a single autosomal dominant gene, a single pair of sex-linked factors, a dominant gene with increased or variable penetrance in men, and polygenic inheritance. [1][7] A family history of androgenetic alopecia *may* be present on either side of the family; however, the absence a family history does not exclude the diagnosis.[1]

Although the presence of androgens and a genetic predisposition are necessary for androgenetic alopecia in men, much about the pathophysiology of this condition remains to be discovered. An interesting study finds that follicles from balding areas of persons with androgenetic alopecia are able to produce terminal hairs when implanted into immunodeficient mice. [19]As well, female androgenetic alopecia has been reported in patients with complete androgen insensitivity syndrome (a genetic defect whereby the penis does not develop and the child appears to be born a girl but is

genetically a male). This suggests that there are more factors than androgen action, be it either systemic or external, present in contributing to androgenetic alopecia. [7][20]

Studies show that androgenetic alopecia is not the main cause of hair loss in women and it the label is being changed to female pattern hair loss. Alopecia can affect women at any time, and may be due to other actions of hormones from pregnancy, menopause, ovarian cysts, birth control pills with a high androgen index, polycystic ovary syndrome, thyroid disorders, anemia, chronic illness, and medications.[21] One of the most common causes of hair loss in pre-menopausal women is a nutritional deficiency of depleted iron stores. [22] In Western medicine, symptoms of low iron levels include: chronic fatigue, weakness, dizziness, headaches. Symptoms of iron accumulation include: joint pain, fatigue, lack of energy, abdominal pain, decreased libido, and heart problems.[23]

Common Western management of androgenetic alopecia include acceptance and doing nothing, pharmaceuticals, hair transplantation, and cosmetic aids. Two pharmaceutical drugs are approved for androgenetic alopecia and include Minoxidil (Rogaine) and Finasteride (Propecia). Finasteride is used as first-line treatment. It inhibits 5α -reductase and was first used for Benign Prostatic Hyperplasia (BPH). It is about 80% effective. If no regrowth occurs after 12 months it is used in combination w/Minoxidil. Minoxidil is a vasodilator, originally prescribed for high blood pressure, with a side effect of regrowing hair. It is approximately 50% effective in the frontal and vertex areas. Minoxidil 2% topical treatment is the primary treatment for women with a 19% response rate[24]. Ketoconazole shampoos (Nizoral) are as effective as Minoxidil. Transplants involve using small grafts of naturally occurring hair bundles placed very closely together and in large numbers. In Japan and the UK they are working on Phase II trials of cloning hair follicles.[25]

Nutritional and Lifestyle changes

Proper education including the importance of lifestyle and nutritional choices is highly beneficial in the prevention of androgenetic alopecia. Some nutrients have been shown to inhibit the activity of 5α -reductase and therefore the production of dihydrotestosterone (DHT) which may be of great benefit in the treatment of androgenetic alopecia. There have been studies in which zinc is shown to inhibit 5α -reductase activity and it has therefore been concluded that zinc is beneficial in disease and disorders related to an excess in dihydrotestosterone (DHT). The greater the amount of zinc, the less amount of DHT, the more abundance of head hair. There have also been studies which have shown that vitamin B6, zinc and azelaic acid combined together even at very low concentrations produced a 90% inhibition of 5α -reductase activity. [26][27][28] Zinc levels can be increased in the body by eating oysters, shell fish, seafood, liver, red meat, poultry, pumpkin seeds, and dried brewers yeast. Take care to avoid greasy foods, bran and brown bread, alcohol, and coffee.[29]

Studies have shown that Saw Palmetto is an effective anti-androgen. It acts in a similar way that Finasteride (Propecia) does. It lowers levels of DHT in the body by blocking 5α -reductase. As well, Saw Palmetto blocks receptor sites on cell membranes required for cells to absorb DHT. Although no studies have been carried out on Saw Palmetto and its relation to hair growth studies have been performed on the use of Saw palmetto in the treatment of benign prostatic disease (BPH), which is similar to androgenetic alopecia in that it is dependent on the production of dihydrotestosterone. All of the studies that have been performed to date show that Saw Palmetto is an effective anti-androgen and has shown conclusively to be effective in the treatment of benign prostatic disease. [26]

Lifestyle changes that can decrease chances of androgenetic alopecia include daily vigorous aerobic exercise, eating a moderate fat/caloric diet, reducing insulin levels, and reducing stress levels. Diet and exercise reduce baseline insulin and free testosterone levels, decreasing the available amount

of total and free testosterone, decreasing the amount of DHT. Lowering insulin and stress levels both result in raising levels of Sex Hormone Binding Globulin (SHBG) which binds to testosterone, thereby decreasing the amount of available testosterone, again decreasing the amount of DHT. [25] The less amount of DHT, the more head hair.

Chinese medicine Approach

Several studies have been done in Chinese medicine to determine the etiology and relationship with zhangfu organs and hair loss, notably the kidney. The exact mechanism by which the present acupuncture treatment technique works to treat baldness is not fully understood. The meridians of the kidney, lung, liver and supplemental points are related to stress. Acupuncture points of the lung meridian are relevant in invigorating and strengthening circulation and oxygenation of the skin. The liver meridian affects detoxification and regulation of the endocrine system. The kidney meridian affects the regulation of the genitourinary system and endocrine system. [4] Kidneys are responsible for: sex drive, fertility, reproduction, growth, nerve function, memory, bone production, urination, and will power. Strong kidneys also express abundance of thick, lustrous, and colorful head hair. If kidneys are not working optimally (either by a deficiency or obstruction) the patient will encounter alopecia or premature hair loss. [30] Symptoms of kidney yin deficiency include: dizziness, vertigo, aches in bones, low back pain, feeling drained, poor memory, tinnitus, night sweats, thirst, fear, anxiety, and lack of inner calm. [31]

In 1997, Emil Iliev et al investigated a link of auricular tenderness to pathology of the body and a rapid indication for the cause of hair loss. [32] The study consisted of three parts, the relevant portion consisted of 120 patients with androgenetic alopecia (109 male and 11 female). The aim was to investigate bilateral auricular points in those with alopecia and to determine the therapeutic effects of treating tender ear points. Results showed participants had different combinations of tender ear points but that different specific groups of ear points were routinely found in the majority of participants. Allergy and endocrine tests were performed to correlate findings in several of the participants. One participant noted a reduction in hair loss from 150 to 60-70 hairs per day after a series of 15 treatments. However, there was no further improvement in hair growth after the course of 15 auricular treatments. Overall, significant therapeutic effects were inconclusive and the author suggests treating tender spots rather than the standard list of recommended points when auricular acupuncture is used to treat alopecia. The main sensitive auricular points can be seen in Table 1. [32]

The study is significant in highlighting the link between Western and Chinese medicine with allergy and endocrine testing to support evidence of auricular finding. It is a good indication that there is a link between endocrine dysfunction and body tenderness, showing that the internal body system is externally expressed. With this knowledge we can treat tender points with acupuncture to remedy internal conditions. Disadvantages of the study include the lack of breakdown between male and female participants to determine differences in sex hormones. Also, there is no definitive treatment plan which makes replicating studies difficult. Further studies could serve well to exam the reduction in hair loss noticed in at least one participant with the use of auricular acupuncture.

Table 1: Main Sensitive Auricular Points	
More than 50%	
Endocrine system	84 (70.00%)
Kidney	82 (68.33%)
Testis	70 (58.33%)
Neurasthenia	69 (57.50%)
Brain system	67 (55.83%)
Lung	65 (54.17%)
Shenmen	64 (53.33%)
Less than 50%	
Vegetative system	59 (49.17%)
Immune system 1	50 (41.67%)
Immune system 2	50 (41.67%)
Allergy	40 (33.33%)
Hypophysis	37 (30.83%)
Thyroid gland	36 (30.00%)
Adrenal gland	32 (26.67%)
Large intestine	29 (24.17%)

Another hypothesis of Chinese medicine characterizes hair loss by differentiating between scarring and non-scarring alopecia. Scarring alopecia refers to irreversible damage to the hair follicles that cannot be treated without hair follicle transplantation with further differentiation between various pathogenic patterns.[3][33] Non-scarring alopecia is caused from inflammation to the hair follicles that leaves the hair follicles able to re-grow if the inflammation subsides. Clinically, non-scarring alopecia appears as little stubbles of hair at the periphery of the bald patch that easily fall out when pulled. Androgenetic alopecia is the most common type of non-scarring alopecia.[3]

A study by Jiang et al emphasizes that hair loss is an effect of the following three conditions: (1) an excess of heat/fire giving rise to wind; (2) qi and blood stasis in the local channels and collaterals that lead to blockage and malnourishment of the hair; and, (3) deficiency of qi, blood, and essence failing to nourish the hair.[3] The excess patterns are generally characterized by a sudden loss of hair or by accompanying symptoms such as headaches. The deficiency patterns are generally characterized by slow progressive hair loss with distinct systemic symptoms.

Heat/fire is caused from depressed emotions or excessive consumption of hot and spicy foods that can generate heat in the blood which if exuberant can generate wind. The upward rising of wind leads to a malnourishment of the scalp by blood and yin, which causes hair loss. Ayurvedic medicine is in alignment with this theory: “the tejas (heat) of the body in association with vaju [worry] and other dosas [constitution] scorches up the hair-root (scalp) giving instantaneous rise to alopecia.”[26][34]

Qi and blood stasis is caused from liver qi stagnation, physical trauma to the head or chronic disease entering the collaterals that can all cause local or systemic qi and blood stasis in the channels and collaterals resulting in blood stasis at the hair pores.

Qi, blood, essence deficiency is caused from chronic illness, congenital or acquired weakness of the Kidneys (e.g. poor constitution, frequent childbirth, excessive sexual activity, overwork) that can damage qi, blood and essence (jing) which in turn cannot nourish the hair roots and cause hair loss.[3] [30]

Jiang's study differentiated clinical manifestations, tongue and pulse readings, history of the onset of alopecia, and other signs and symptoms to determine the treatment and acupuncture plan. Treatment was comprehensive and consisted of several steps including plum-blossom needling, application of fresh ginger to stimulate the hair follicles, stimulating Huatojiaji points, and then applying local treatment. [3][30] Treatments were carried out every day for fifteen sessions (one course), followed by a five-day break, and then another course of treatment. Conclusions showed that prognosis depends on the type of alopecia as well as the pattern differentiation. Non-scarring alopecia of the first two patterns, "blood heat wind exuberance" and "blood deficiency generating wind," both have good prognosis with up to 80% of participants being treated successfully. Findings were significant and showed improvement with a gradual return of hair growth usually after two courses of treatment. Non-scarring alopecia of the other patterns did not show significant improvement, and further studies including herbal remedies were suggested. The authors suggest female androgenetic alopecia should be treated according to the clinical picture of the patient, addressing menstrual cycle regulation in a patient with polycystic ovary syndrome in combination with the relevant treatments used.

This study is quite exciting in the importance of the approach and response of androgenetic alopecia. Using the approach of holistic Chinese medicine and acupuncture with appropriate pattern diagnosis and addressing concurrent clinical manifestations as a further dis-ease of the body allows for successful prognosis of hair regrowth in patients displaying signs of androgenetic alopecia. The study lacked in generating findings for all pattern differentiation, in differentiating male and female participants, and in stating the number of participants with strong statistical analysis. Suggestions for further inquiry include: incorporating herbal formulas that can further treat the specific pattern dysfunctions; patient questionnaires to corroborate pattern symptoms, dermoscopic photography to track progress; and, blood tests to test for serum levels against the Chinese backdrop.

A study and patent invented by Chun, Pil H. [4] suggests specific and unique acupuncture techniques (with or without electrical stimulation) for the treatment of male and female androgenetic alopecia. Chun patented a technique using 12 acupuncture points inserted with double tonification and double sedation techniques and stimulated with electrical current that shows significant results in the regrowth of hair. The study consisted of 154 cases (127 male and 27 female) ranging in age from 20 to 78 years. Treatments lasted 15-30 minutes per session and approximately twice per week. After an initial period of two months, treatments could be reduced to once per week, depending on patient prognosis. Tests showed positive results in 95% of participants regardless of age and race. A cessation of hair loss was observed an average of two to four weeks after initial treatment. New hair growth was noted after an average of four to six weeks. Regrowth began at the occipital region and advanced to the vertex and frontal regions (reverse pattern of actual hair loss). Regrown hair was thick, long, and had a rich pigment. After reaching a steady condition, most patients were treated once per month. The 12 points include: Zhongfeng (LV 4), Hegu (LI 4), Zhubin (KI 9), Sanyinjiao (SP 6), Qihai (CV 6), Zhongwan (CV 12), Zusanli (ST 36), Taibai (SP 3), Taiyuan (LU 9), Yuji (LU 10), Shaofu (HE 8), and Xingjian (LV 2). See Figure 4. [35]

Complete statistical analysis was not reported and would be very beneficial in this study. The implications for future treatment of androgenetic alopecia are highly significant. If this study and patent

can demonstrate an accurate, effective acupuncture treatment plan, independent of race, ethnicity, age, sex, or other clinical manifestations, then it implies that one diagnosis will respond to a “prescriptive” acupuncture treatment. This opens the doors to further studies for the usage of acupuncture in many Western ailments where pharmaceutical drugs seem to be the only option. This treatment strategy can be *the* door opener for many people interested in using acupuncture as an effective, low cost, drug- and side-effect-free treatment for medical conditions that are widely encountered.

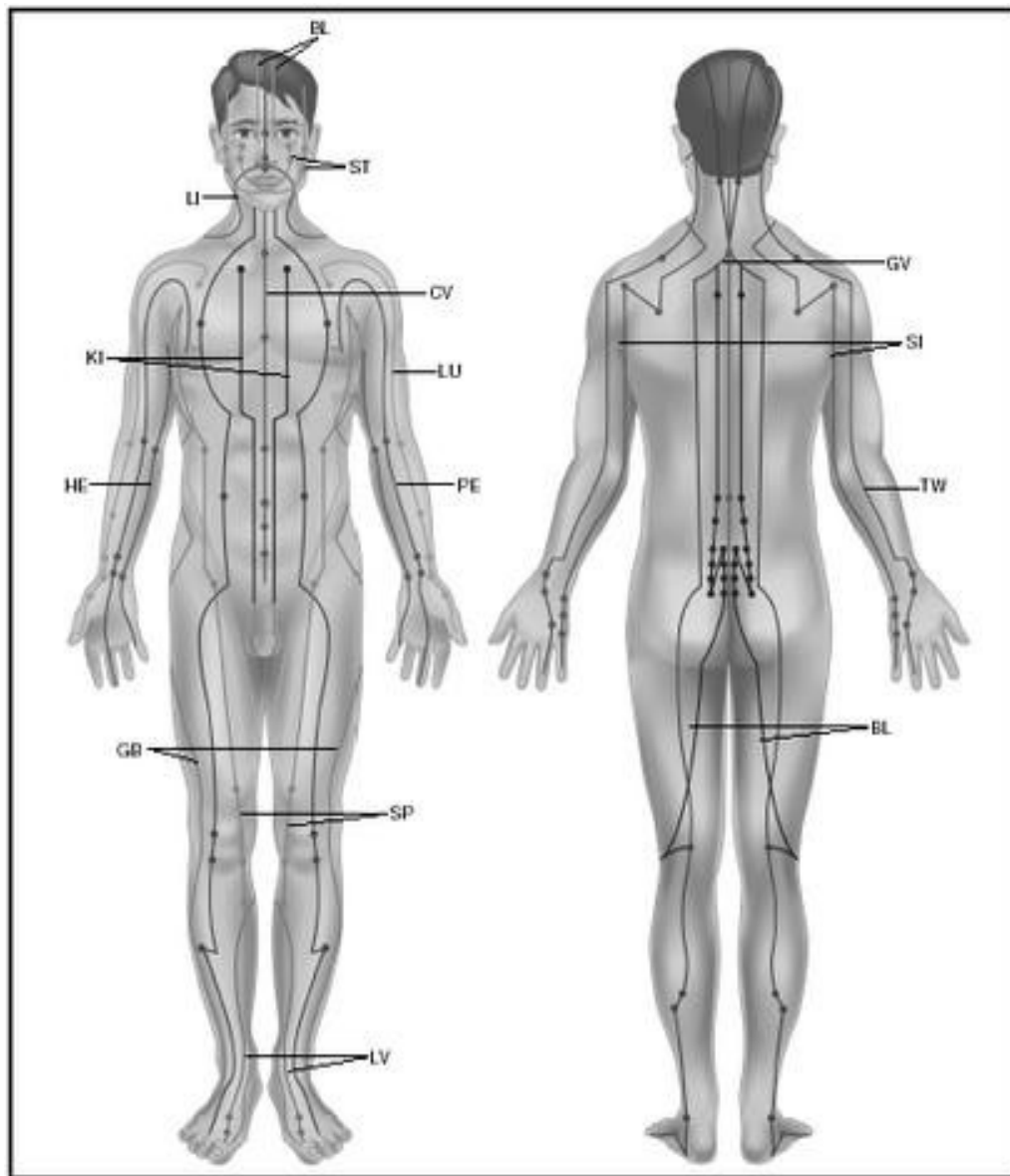


Fig. 4

Conclusion

The greatest conclusion these studies suggest is that proper education, psychological support, lifestyle, diet, and exercise changes are necessary in the prevention and treatment of androgenetic alopecia, regardless of which modality you use for diagnosis. The psychological effects of hair loss are significant: ranging from low self-esteem, depression, worry, negative self-image, limited sexual activity, to fearing that your future is out of control and hopeless. The implications of living a life under that distress needs to be addressed by society. However, both Western and Chinese medicine address the idea that lifestyle changes, nutrition, and psychological support (before and after) are key in preventing hair loss.

It is important to note that Western prescription medicines (Finasteride and Minoxidil) try to remedy ailments the same way that preventative changes would have worked if followed through life. Western medicine studies focus on treating androgenetic alopecia by lowering the amount of dihydrotestosterone to stop hair loss or regrow hair once it has disappeared. Preventative lifestyle changes that would decrease the amount of DHT in your body throughout life (maintaining hair count) include daily vigorous exercise, low fat and caloric diet, decreased stress, and decreased sugar intake.

Chinese medicine addresses that the meridians and pattern dysfunctions used to treat and diagnose androgenetic alopecia are the ones that deal with emotional stress, over-exertion, fast-paced lifestyle, poor eating habits, and generalized poor health. Again, the implications are strong for education and lifestyle change. Society can use preventative care with proper spiritual/emotional counseling, proper diet decreasing intake of greasy, spicy, and animal product foods, exercise, and relaxation techniques. As well, the patent and effectiveness of acupuncture diagnosis for androgenetic alopecia is very exciting.

An important suggestion is educating the Western-minded public about the importance of lifestyle, eating, exercise, and spiritual habits and how they affect each and every aspect of the body, providing a holistic picture of true health. It is also important to educate the public about new effective therapies that are low cost, reliable and are without drugs, chemicals, surgery, or side-effects. It is important to open the eyes of the public from a generally, single-focused view of body ailments/dysfunctions to seeing androgenetic alopecia as a holistic bodily concern that should be addressed from the big picture.

In addition, it is important to educate the public, Western, and Chinese medicine practitioners in the conditions that cause androgenetic alopecia and provide further studies to unite Western and Chinese modes of diagnosis. The link between iron levels in Western medicine and kidney dysfunction in Chinese medicine is very interesting. Several Western signs and symptoms of iron dysfunction overlap with symptoms of kidney yin deficiency. These include: chronic fatigue, weakness, dizziness, vertigo, poor memory, joint pain, change in sex drive, hair loss, decreased will power/anxiety/lack of inner calm. New suggestions include the use of serum tests and sensitivity testing on the kidney channel to test a new hypothesis of: “is the kidney the main gate to self expression?; noting the factors of: psychological wellness, sufficient energy, and abundance of head hair?” Suggested serum test include: Complete Blood Count (CBC), Comprehensive metabolic panel (CMP), iron, ferritin, and total iron-binding capacity (TIBC). In addition to serum and sensitivity testing, the inclusion of herbal formulas in conjunction with acupuncture treatments, dermoscopic photography showing before and after findings, with a strong statistical analysis would prove to be a very strong case for the use of acupuncture in the treatment of androgenetic alopecia and the greater picture of kidney health including: mental clarity, general wellness, inner drive and purpose, full energy, high self-esteem, attractive appearance, and perhaps even the disappearance of dementia.

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