Read Item - Androgenetic Alopecia In Women

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Abstract: Suitable for patients

Key Points:

1. Androgenetic alopecia is the medical name for common patterned baldness. It is caused by hormones in genetically susceptible people

2. The critical hormone in producing the androgenetic alopecia is Dihydrotestosterone (DHT). 5-Alpha Reductase is the chemical that determines how much DHT is produced.

3. Inheritance of androgenetic alopecia is uncertain but it appears as though it can be inherited from either the mother or the father.

4. Hair growth is cyclical with each follicle undergoing periods of active growth lasting up to three years followed by periods of dormancy lasting three months before the next hair is produced from the follicle. Normally this cycle continues throughout life with each hair growing, resting, then being shed and finally being replaced by another hair of the same size. In androgenetic alopecia the replacement hair is not the same size as the one that went before it and with each passage through the hair cycle it gets smaller and smaller.

5. Androgenetic alopecia can begin at any age after puberty, but once it begins it progresses relentlessly leading to advanced baldness over a variable period of time. This period may be as short as 5 years or as long as twenty years, and the hair loss often occurs in fits and bursts.

6. Minoxidil lotion (Regaine), Spironalactone tablets and Cyproterone acetate tables are the only treatments shown to benefit androgenetic alopecia. There are many bogus treatments on the market and it is important to discuss any treatment with a qualified medical practitioner prior to commencing any such treatment.

7. Hair transplants can occasionally benefit women with severe androgenetic alopecia, but the benefits are less dramatic than in men.

Definition
Androgenetic alopecia or common baldness refers to scalp hair loss in both men and women. In men it occurs in a distinct pattern beginning with a receding frontal hairline, onto the development of a bald patch on the top of the head and, ultimately, complete loss of hair on the top of the head. In women the frontal hairline tends to remain intact and they simply develop diffuse thinning over the crown.

Most women will develop baldness eventually and what differs from person to person is the rate at which the hair is lost. In general, 20% of women will show the signs of balding by the age of 30, 30% by the age of 40, 40% by the age of 50 and 50% by the age of 60.

The name androgenetic alopecia is derived from androgens (a class of sex hormones that include testosterone), genetics (referring to the importance of having inherited the balding gene) and alopecia, which means hair loss. There are many other causes of alopecia other than androgenetic alopecia and a precise diagnosis is required before any treatment is commenced.

Hormonal influence on baldness:
In the 1940's it was noted that women with over production of testosterone developed acne, excess facial and body hair and baldness on the scalp. Since that time we have learnt a lot about how androgens (sex hormones) trigger the balding process in susceptible women. The

crucial hormone is Dihydrotestosterone (DHT) which is produced in the hair follicle from testosterone. The Dihydrotestosterone is five time more active than the testosterone from which it is derived. The manufacture of Dihydrotestosterone is regulated by a chemical called 5-Alpha Reductase.

Inheritance of Androgenetic Alopecia:
The tendency to develop hair loss at a young age is passed on through families. The way in which it is passed on is not clear but it does seem as though the tendency can be inherited from either parent. While most people can identify someone in their family with hair loss this is not always the case.

How much 5-Alpha Reductase you have seems to be an inherited factor that determines when you start to go bald. The more 5-Alpha Reductase you have, the more Dihydrotestosterone you will produce and the quicker you will start to bald. Rarely is the problem due to over production of testosterone and this can be easily tested for.

The Hair Cycle
Each hair follicle produces a number of hairs throughout your life. The first hair grows from the follicle at the rate of about 1cm a month for about three years. After that time that hair will die and no longer grow and simply sit dormant in the follicle for a further three months. After that three month interval the next hair starts to grow out of the follicle and, as it grows it pushes the first one out. This is a cycle that continues throughout life.

In the animals all the hairs are synchronised to grow and to stop growing at exactly the same time which is why animals shed their hairs all at once during a moult. In humans the hair growth is random so that rather than losing all our hairs at once every 3 years we tend to lose a few each day. It's normal to lose up to fifty hairs a day. As long as the hairs that are lost are replaced by one of the same size and same characteristics, then the status quo is maintained.

If, however, the new emerging hair is not as thick and does not grow for as long as the one that went before it, then androgenetic alopecia starts to develop.

The mechanism of androgenetic alopecia is that in people genetically pre-disposed to produce more 5-Alpha Reductase, there will be more DHT. With each passage through the hair cycle the DHT will trigger shrinkage of the new hair and produce a gradual step-wise reduction in the size of the hairs on the scalp. Ultimately the hairs will be so small that they don't even reach the surface of the skin and all that one sees is the pore.

If you look at the skin on a bald scalp under the microscope all the follicles will still be present but they are just so tiny that they cannot be seen with the naked eye.

Time Frame For Androgenetic Alopecia
Hair loss can begin at any age after puberty. Once it starts it tends to continue through the various stages of hair loss over a ten to twenty year period. The hair loss is not constant but goes in fits and bursts. It is common for people to go through phases of accelerated hair loss lasting three to six months following by periods of stability lasting six to eighteen months.

Just as it takes time to lose hair any treatment to restore hair will take many years.

Treatment of Androgenetic Alopecia
At present there are two approaches commonly used in the treatment of androgenetic alopecia. The first involves the use of topical minoxidil. This is a lotion that is applied to the scalp twice a day and used, first of all, to prevent further hair loss and, secondly, to try and stimulate hair regrowth. It is not effective in everyone and needs to be continued in order to sustain the benefits.

The second treatment approach involves trying to block the hormones that are responsible for the progression of androgenetic alopecia. Two medications are being used for this, cyproterone acetate and spironolactone. A prescription is required for these medications and

it is important to acknowledge that these medications will need to be continued in the long term to sustain any benefits.

How To Tell If The Treatment Is Working
One of the most difficult areas in the treatment of hair loss is trying to determine whether the treatment is working or not.
This is because hair loss generally occurs slowly and commonly occurs in fits and bursts with periods of accelerated hair loss lasting three to four months followed by periods of relative inactivity lasting six to twelve months.

How to tell if the treatment is working:

1. Daily Hair Shedding:
You can count the number of hairs you loose each day. This will give you a rough guide to how your condition is going. It is not entirely reliable as there is some season of fluctuation in the amount of hairs you loose as well as some fluctuation day to day and week to week.

2. Standard Photography:
This can be helpful, however, it will not reliably pick up small improvement or deteriorations.

3. Standardised Digital Photography:
This system has been specially created to monitor hair loss. It is the same system that has been used in trials all around the world to evaluate new treatments for hair loss by scientists and government regulatory authorities.

Currently Melbourne is the only place in the world where patients can access this technology to monitor their response to treatment. In general, photography is recommended every four to six months, depending on your condition. The sensitivity of the system does not usually allow changes to be detected earlier than this. The photographs work best when comparing photograph to photograph. It is still difficult to compare photographs to people.

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