



## **Jeff Donovan MD PhD FRCPC**

*Dermatologist, specializing in hair loss*

4370 Lorimer Road Suite 334B - Whistler BC V0N 1B4

Phone: 604.283.1887 Fax: 604.648.9003

Email: [whistleroffice@donovanmedical.com](mailto:whistleroffice@donovanmedical.com) Web: [www.donovanmedical.com](http://www.donovanmedical.com)

### **Alopecia Areata**

#### **What is alopecia areata?**

- Alopecia areata is an autoimmune condition that affects about 2 % of the world's population.
- 50 % of those who develop alopecia areata will experience hair loss before the age of 20. Therefore, alopecia areata is frequently starts in childhood and adolescence.
- The condition is classified as an autoimmune condition, meaning that the body's own immune system is attacking the hairs.
- The precise cause is unknown.

#### **What are the different types of alopecia areata?**

- The vast majority of individuals with alopecia areata develop a limited number of patches (circular areas of hair loss) on the scalp.
- Alopecia totalis refers to loss of all scalp hair.
- Alopecia universalis refers to loss of scalp hair as well as all body hair.
- There are many other types as well

#### **What are the treatments for alopecia areata?**

Treatments help some patients regrow hair.

If patients have small areas of hair loss, treatments include:

1. steroid injections
2. minoxidil
3. prednisone (short course)

If patients have more extensive areas of hair loss, treatments include:

1. diphencyprone
2. anthralin
3. methotrexate
4. sulfasalazine
5. steroid injections
6. prednisone
7. cyclosporine
8. tofacitinib/ruxolitinib

# Dr. Donovan – ARTICLES ON ALOPECIA AREATA

## ARTICLE 1 Vitamin D and Alopecia areata in Children: What is the Link?

The role of vitamin D in alopecia areata continues to be investigated by various researchers. A growing number of studies have indicated that patients with alopecia areata frequently have low vitamin D levels. Other studies, however, have not reached this conclusion.

A new study compared vitamin D levels in 20 children with alopecia areata to 34 children who did not have alopecia. Interestingly, vitamin D levels did not differ between these two groups. However, children with alopecia areata who had the lowest vitamin D levels were more likely to have a greater number of patches of alopecia, more extensive hair loss and were more likely to have had the condition for a longer duration.

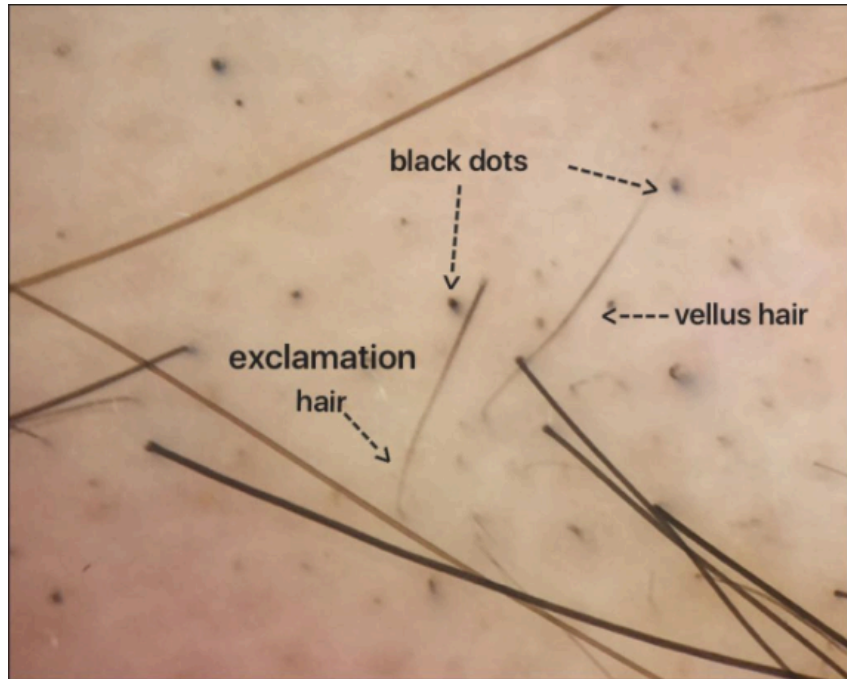
### **Comment:**

There has been an ever increasing number of studies looking at the role of vitamin D in patients with alopecia areata. The conclusions we have from various studies to date are mixed. It is important to separate studies of children with alopecia areata from adults with alopecia areata as the role of vitamin D could be different in these two groups.

*Study: Unal and Gonulalan. Serum vitamin D level is related to disease severity in pediatric alopecia areata. J Cosmet Dermatol. 2017.*

This study above reminds us that although low vitamin D might not cause alopecia areata, low levels could potentially be associated with more severe forms. This information suggests that recommending vitamin D supplementation for individuals with alopecia areata is likely a reasonable piece of advice. More studies, however are needed to determine whether this truly impacts hair growth or the effectiveness of various treatments.

## ARTICLE 2: Will I lose more hair?



Alopecia areata (AA) is an autoimmune condition affecting 2 % of the world.

The condition is well known to be challenging to predict what will happen in the future. In fact, AA tends to be one of the most unpredictable hair loss conditions. It can grow and fall at any time.

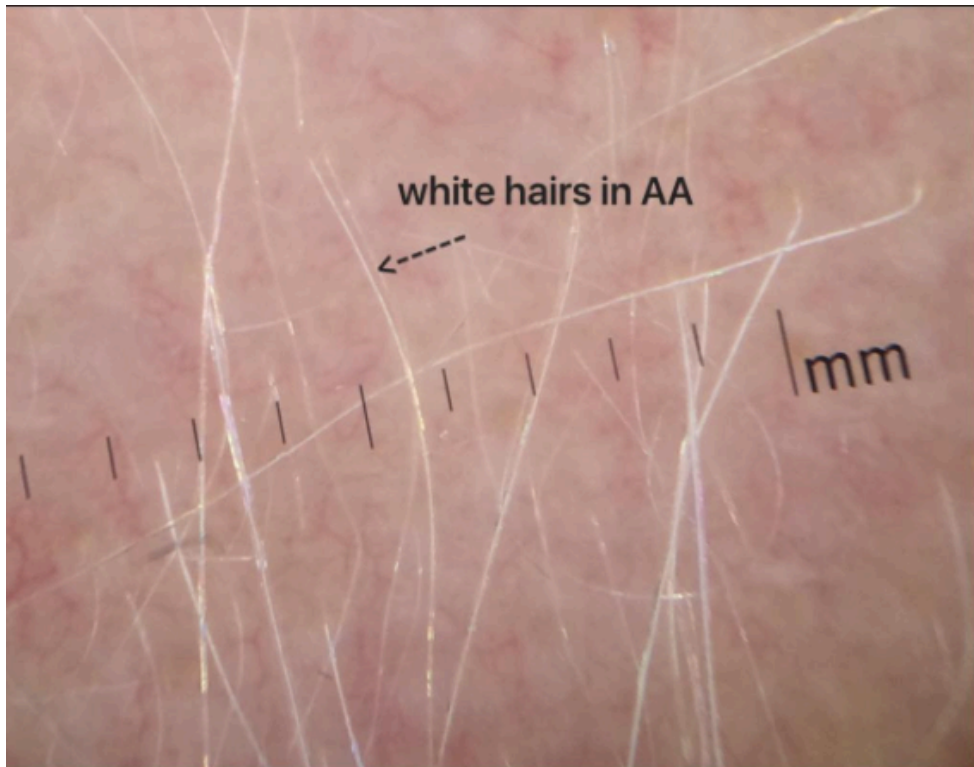
Even though AA is said to be unpredictable - it is not completely unpredictable. We have come to understand over the years certain scalp "dermatoscopic" features that suggest a patient's condition is active.

This includes:

- black dots (which are hairs broken right at the surface),
- tapered hairs and exclamation hairs,
- short vellus hairs and
- broken hairs.

These features all suggest ongoing inflammation in the scalp and a high likelihood of further hair loss.

## ARTICLE 3: ALOPECIA AREATA. Alopecia Areata- Why do hairs sometimes grow back white?



To understand why some hairs grow back white, we need to take a closer look at the cause of alopecia areata. Alopecia areata is an autoimmune disease, which means that the immune system is reacting against itself.

In patients with alopecia areata, we know that the overactive immune system targets hair follicles. It also targets pigment related proteins in the hair follicle as well as the actual cells that reside in the hair follicle and produce pigment (called melanocytes). Although we often say it is an autoimmune disease that affects hair follicles, a more accurate way to describe the condition would be to say that alopecia areata is an auto immune condition that affects:

- 1) hair follicles
- 2) melanocytes that reside in hair follicles and their associated proteins and
- 3) nails.

## ARTICLE 4: JAK inhibitors for AA

Here, we will take a look at using topical and oral JAK inhibitors for treating alopecia areata. This includes the drugs tofacitinib (Xeljanz) and ruxolitinib (Jakavi, Jakafi).

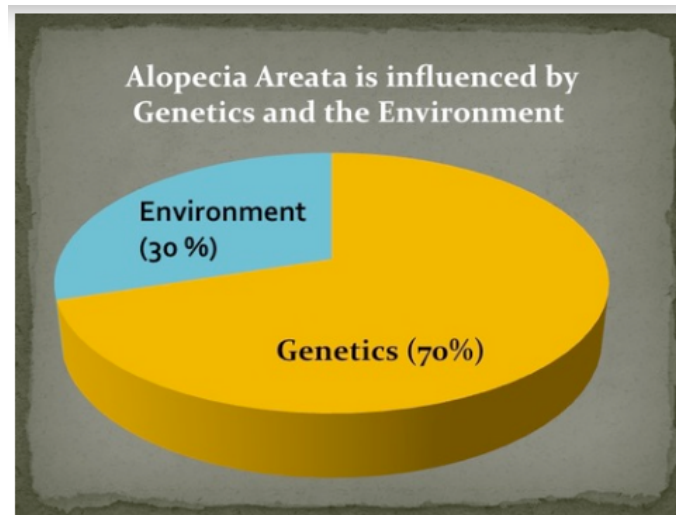
### **A closer look at the Oral JAK Inhibitors**

Today, we will start with the oral JAK inhibitors. To date, there have been six reasonably sized studies looking at the benefits of the oral JAK inhibitors. These are summarized in the table. Most of the studies have been done with tofacitinib- the one exception is the study of 12 patients using ruxolitinib by Mackay-Wiggan and colleagues. Two of the 6 studies have been in patients under 18 years - namely the 2017 studies by Craiglow and colleagues Castelo-Soccio and colleagues.

### **Conclusion**

The message of all the studies has been the same: use of oral JAK inhibitors in patients with advanced alopecia areata helps, approximately one half achieve cosmetically significant regrowth.

## ARTICLE 5: If a parent has alopecia areata, what is risk of alopecia areata in their children?



Alopecia areata is an autoimmune condition. About 2 % of the population will develop alopecia areata at some point in the lives. About 70 % of the condition can be explained by genetics or 'genes' that get passed down from generation to generation. But 30 % of the condition is environmental. This means that it's possible for alopecia areata to develop in one identical twin but not in the other. The condition is not entirely explained by genetics.

### **Passing the condition along to children**

If one parent has alopecia areata, there is a slight increased risk that a child will develop the condition. The exact risk depends on a number of factors:

- At what age did the parent develop alopecia?
- Does the parent have alopecia areata, totalis or universalis
- Are there other autoimmune diseases in the family ? (vitiligo, autoimmune thyroid disease, rheumatoid arthritis, type 1 diabetes, multiple sclerosis, atopic dermatitis)
- How many other family members have alopecia areata?

The risk for ANY child to develop alopecia areata is 2%. When one more more of the above factors are present the risks goes up above 2 %. IN general, only about 20 % of patients with alopecia areata have a family history of the condition. No genetic tests at present

At present there is no genetic test whatsoever to predict the risk of a child developing alopecia areata if a parent has alopecia areata. I generally tell parents that there is a much much better chance their child will NOT develop alopecia areata.

