Cannabis Use Effect on Alopecia Areata

Abeer Ayad A ALlihabi*

Department of Psychology, Taibah University, Saudi Arabia

Abstract

Alopecia areata is an autoimmune disease of the hair follicles that cause an unpredictable hair loss. The disease prevalence is estimated about 2% in general population though the lifetime. The disease is associated with various other concurrent disorders such as depression, thyroid diseases, and anxiety. Cannabis Receptors especially (CB2Rs) are found on immune cells, including lymphocytes, macrophages, mast cells, natural killer cells, peripheral mononuclear cells, and microglia.

In this Case, a 15 year-old girl had Alopecia Universalis and multiple psychiatric diagnoses. She was self-medicated for her symptoms by using Cannabis and as coincident her hair stated to grow back. In this case, I would like to grab attention for cannabis as a possible cure with eliminating its side effect.

Keywords: Alopecia; Alopecia universalis; Autoimmune disease; CBD; Cannabis

Introduction

Alopecia areata is an autoimmune disease of the hair follicles that causes an unpredictable hair loss. The common signs of the disease include small annular or patchy bald lesion that commonly affects the scalp. If a total hair loss on the scalp occurred, it's commonly known as alopecia totalis. However, in the case of complete hair loss of the entire body, it is known as alopecia universalis. After the hair loss, the growth will take months, and sometimes it will take several years, but there is never a guarantee. The best prognostic factor is the extent of hair loss when first diagnosed. A less favorable prognosis is observed with childhood onset alopecia areata and ophiasis. For the victims who have few small patches, the hair will grow back after a year. If hair loss has affected half of the hair, the chances of it developing or the chances of having a full recovery are not very good. When a person has experienced Alopecia Universalis and Alopecia Totalis, the chances of hair developing back are less. The extent of hair loss can identify the development of disorders. There is less prognosis for children with alopecia areata. Remission is likely to take place in patients who have limited patchy hair loss for less than one year [1].

The disease prevalence is estimated about 2% in the general population through the lifetime. Some studies indicated that the diseases are more prevalent in women, especially those aged >45 years of age. The disease is associated with various other concurrent disorders such as depression, thyroid diseases, and anxiety [2]. Some autoimmune diseases occur together more frequently, such as type 1 diabetes, inflammatory bowel diseases, type 1 diabetes mellitus, and psoriasis, because of a shared gene that predisposes for these diseases. The studies indicate that these are some of the genes that have contributed significantly to alopecia areata as well as increase the chances of inflammatory bowel diseases, type 1 diabetes mellitus, and psoriasis.

The autoimmune etiology located in the HLA region encodes the MHC molecules in the human body. This is the major contributor to the alopecia areata phenotype in the body. According to a GWAS analysis conducted in humans, it is clear that 14 genetic loci have contributed or those that are related to alopecia areata. These are involved in immune functioning. CD4+ CD8+ T is known as the significant effectors of AA disease pathogenesis.

The commonly known onset associated with the disease includes physical and emotional stress, vaccination, and febrile illness. The commonly known treatment for the disease includes cortisol, which can be done locally or systematically. Moreover, a patient can be advised on contact immunotherapy.

Cannabis Receptor distribution in the brain is present at a high density at the frontal cortex, the basal ganglia, and the cerebellum. CBI can also be found or present in the hypothalamus, hippocampus, and the anterior cingulate cortex. At the brainstem, there is a low concentration of CBIR, hence explaining the attribute of the low toxicity of cannabinoids. Consistently, evidence

was accumulated, demonstrating a possible role for CB1R in the periphery, including fat tissue, gastrointestinal tract, eyes, cardiovascular framework, liver, pancreas, insusceptible framework, bone, skin, and skeletal muscle. CB2Rs are found on immune cells, including lymphocytes, macrophages, mast cells, natural killer cells, peripheral mononuclear cells, and microglia.

The immense articulation of CB2 on immune cells is a potential connection to autoimmunity and possible Treatments. According to Cannabidiol (CBD) treatment on mice, it is clear that the total number of B, T helper, and T cytotoxic cells has decreased. The following study carried out at a group of high school and university students have shown significant results. The total number was divided into three groups, where each group had 30 participants [3]. Among the three groups, there was a mechanism group, a treatment group that was receiving dried leaves and stems of cannabis Sativa for about 6 to 24 months, and an added treatment group that was receiving bhang for 24 to 36 months. The results showed that there was a reduction in immunoglobulin M, immunoglobulin C3, and C4. In addition, there was a decline in the number of B-and natural killer cells.

Case Presentation

The patient in this case is a 15-year-old girl in grade 10 who is diagnosed with mild severity of intellectual disability. Our patient suffers from depression, anxiety, and social anxiety, particularly around strangers and in crowded places. She worried that people may judge her; hence she ends up feeling embarrassed when around people. She has palpitation, tremor, and a blushing face. She ended up isolating her-self. Since grade 3, she was diagnosed with alopecia universals multiple treatment modalities tried with no benefit, and in her school, students tend to bully and tease her because of her look. She was trying to blend with some of her peers, she ended being involved in risky behaviors such as shoplifting, skipping classes, and escaping home even without the knowledge of the parents. Furthermore, she began drug use without knowing that there are consequences.

At grade 9, she began smoking marijuana with some of her friends. Smoking made her feel less anxious, calm, and paranoid. She believed that by smoking, she would be able to sleep well, and the substance helps her overcome alopecia problem, and her hair started growing especially on scalp but no effect on eyebrows, lashes, and body hair.

She has difficulties to focus because she is distracted easily. She lost essential things as she is forgetful and disorganized. She gets mad quickly, and she punches walls and windows as a way of expressing her anger. ADHD medication helps her to focus, but it caused a panic attack and nausea. The psycho educational assessment shows the total score at the first percentile. The risk factors of the disease include a family history of intellectual disability, attention deficit and hyperactivity disorder, mood disorder, and anxiety. She qualified diagnoses of attention deficit hyperactivity disorder, and social anxiety. The appropriate medication was started to treat her anxiety and sleep difficulties with the plan to start stimulant to treat ADHD symptoms.

Discussion

Studies indicate that autoimmune disease is likely to affect about 3% of the world population. Autoimmune diseases may be rare, but they are the major causes of morbidity and mortality. After diagnosed a patient with autoimmune diseases, it is advised to find a treatment that had low or minimal side effects. The commonly used treatments methods today are based on glucocorticoids which are known for their famous potent therapeutic effect and at the same time, their side effects are not known. Endocannabinoid is a new natural candidate for treating and for understanding autoimmunity. Cannabis has made legal in various countries since it has been proven to have medicinal effects or medicinal use. Multiple Sclerosis has proven to be among one of the autoimmune diseases that can be treated with cannabis [4]. It has the largest number of randomized controlled trials conducted in this field, yet results lack consistency, possibly due to the studies' limitation.

In our case, the patient is using cannabis, a treatment that has proven to be effective, but it is associated with other risk factors. Studies have shown some of the systematic reviews and identified the possible pulmonary or bronchial problems. Some of the problems include wheezing, coughing, and shortness of breath. In addition, there is a possibility that a patient will develop acute bronchitis and they may have impaired respiratory functioning that is caused by a lot of cannabis smoking. Various studies conducted from different countries indicate that there is a possibility that the frequent use of cannabis is a predictor of psychosis. Moreover, it can cause depressive symptoms, leads to suicide and mania. The daily use of cannabis Sativa can increase the level of anxiety in a patient or an individual [5]. The people who are at the age of 29 and are using cannabis on the daily basis are more likely to elevate their level of anxiety. Many patients state that the use of marijuana helps in reducing anxiety. They claim to feel more comfortable in public and less social anxious which is temporary. For people aged 17, the daily use of cannabis reduces the chances of a child to complete high school and they are less likely to obtain a degree from the college or the university. Driving under the influence of cannabis may cause a risk because the person's attention, memory, and decision making are not normal. A person may have different impairments that are found to persist after acute intoxication.

The idea of triggering CB2 receptors will suppress immune response, something that is beneficial for people with alopecia aerate. The psychoactive ingredient in marijuana is known as Tetra Cydrocannabinol (THC), which can be used for patients with autoimmune diseases such as alopecia areata.

References

1. Ikeda T. A new classification of alopecia areata. Dermatology. 1965;131(6):421-45.

2. Fricke ACV, Mariya M. Epidemiology and burden of alopecia areata: A systematic review. Clin Cosmet Investig Dermatol. 2015;8:397-403.

3. Lai YC, Yew YK. Severe Autoimmune adverse events post herpes zoster vaccine: A case-control study of adverse events in a national database. J Drugs Dermatol. 2015;14(7):681-4.

4. Garcia AB, Soria-Gomez E, Bellocchio L, Marsicano G. Cannabinoid receptor type-1: Breaking the dogmas. Version 1. F1000Res. 2016;5.

5. Kozela E, Juknat A, Gao F, Kaushansky N, Coppola G, Vogel Z. Pathways and gene networks mediating the regulatory effects of cannabidiol, a nonpsychoactive cannabinoid, in autoimmune T cells. J Neuroinflammation. 2016;13(1):136.