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A CLINICAL CASE STUDY OF ALOPECIA AREATA TREATED WITH TRADITIONAL SIDDHA FORMULATIONS SEENTHIL CHOORANAM AND MALAIVEMBHATHI THAILAM

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ABSTRACT

Alopecia areata (AA) also known as Puzhuvettu in tamil is an autoimmune disorder which is characterized by disease involving non-scarring patchy hair loss determined mainly due to underlying inflammation. This disease may affects hair on the scalp and/or other parts of the body. The AA occurs in people of all ages and affects 1–2% of humans. Skin biopsies of AA affected skin show a lymphocytic infiltrate in and around the bulb or the lower part of the hair follicle in anagen (hair growth) phase. A breakdown of immune privilege of the hair follicle is thought to be an important driver of alopecia areata. Management of AA can be challenging, and although multiple treatment modalities have been explored, no therapy is currently FDA-approved. The decision on the type of treatment depends on the type of hair loss, extent of changes, general health status, the patient's age, and his/her motivation. Treatment methods should be chosen individually for each patient. Immunosuppressant drugs such as cyclosporine, methotrexate and azathioprine along with corticosteroids are being currently used for clinical management of AA, whereas these drugs offers numerous side effect upon long term usage included acne, striae, cushingoid face, truncal obesity, easy bruising, osteoporosis, weight gain. Further usage of all immunosuppressant drugs carry the serious

risk of infection. Hence exploration of drug from alternate complimentary source with fewer side effects and with improved efficacy becomes highly essential and need of the hour for clinical management of AA. Present investigation aimed at clinical evaluation of the siddha formulations Seenthilchooranam (SC) for internal and Malaivembhathithailam (MT) for external therapy for management of AA. Outcome of the study reveals that treatment with SC and MT has shown significant improvement in sixty days of treatment evident with high rate of hair proliferation. Further there is no significant changes were observed in any of the hematology, serology and urine parameters observed during the study phase. It was concluded from the data's obtained from the present case study that siddha formulations possess excellent activity in treating AA and further study has to be carried out on its clinical implication in larger population in both the genders and also to study the molecular mechanism underlying the action of the drugs in clinical management of AA.

KEYWORDS: Alopecia Areata, Immunosuppressant, Corticosteroids, Siddha Formulations, Seenthilchooranam (SC), Malaivembhathithailam.

1. INTRODUCTION

AA typically presents as smooth, sharply demarcated, round patches of hair loss without atrophy [with "exclamation point hairs" observed on the periphery of the patches. Special designations of the disease include alopecia universalis (AU) (total body hair loss), alopecia totalis (AT) (total scalp hair loss), or alopecia in an ophiasis pattern (band-like hair loss on the temporal and occipital scalp). Less common variants include the diffuse variant with widespread thinning of hair across the scalp or the reticular pattern with recurrent hair loss in one area and spontaneous hair regrowth in another. Ophiasisinversus causes band-like hair loss in the frontoparietotemporal area.[1] Environmental factors likely exacerbate or induce AA. Stress is an often-cited cause of AA, but the literature from human studies is inconclusive.[2-4]

Hair follicles from patients with AA exhibit both abnormal hair cycling and inflammation. Normally, a hair follicle goes through 3 phases during its growth cycle: anagen, catagen, and telogen. The hair shaft elongates during the anagen phase. It can remain in this phase for a period of months to years. Next the follicle enters a 2- to 4-week period known as the *catagen phase*, during which it prepares to enter the "resting phase" known as the *telogen phase*. This final part of the follicular growth cycle takes approximately 3 months to complete, after which the hair shaft is lost as a "club hair" and the hair follicle begins the cycle again.[5]

In AA, inflammation causes a large proportion of hair follicles to shift from the anagen phase to the telogen phase. In the acute stages of AA, most hair follicles are still in the anagen phase. If one were to perform a scalp biopsy at this stage, the histologic examination would reveal an excessive amount of lymphocytes in and around the hair follicle. While the normal ratio of anagen to telogen hairs in the scalp is usually 80:20, patients with AA exhibit a 60:40 or even 50:50 anagen to telogen ratio, and in some cases the number of telogen hairs might dominate.[6-9]

1Diphencyclopropenone and Squaric acid dibutylester are immunotherapeutic agents used as the second-line treatments for AA. Urticaria, dermatitis, blistering, and depigmentation are common side effects.[10] Other less commonly used treatments include topical minoxidil,[11] plus ultraviolet A radiation or excimer laser,[12] and systemic immunomodulators.[13]

Siddha system of medicine has gained people's satisfaction with its therapeutic outcomes and there are perceptions that herbal medicines are inherently safe. Furthermore, the dissatisfaction of patients towards allopathic medicine in terms of efficacy and safety has also prompted the use of traditional siddha preparations. Siddha medicine is one of the most ancient medical systems of India. Siddha is the mother medicine of ancient Tamils/Dravidians of peninsular South India. The word Siddha means established truth. The persons who were associated with establishing such a Siddha school of thought were known as Siddhars. They recorded their mystic findings in medicine, yoga, and astrology in Tamil. Fundamental Principles of Siddha include theories of Five Elements (Aimpootham), and Three Forces/Faults (Mukkuttram). The Eight Methods of Examination (EnvakaiThervukal) is used to determine diagnosis, etiology, treatment and prognosis.

An ideal drug for treating AA should be safe nontoxic and must be efficacious in stimulating the harigrowth without offering potential side effects. Drug from traditional siddha medicines certainly have the quality of herbal origin and also free from adverse effects which could be really affordable and may improve the quality of life of the people with such disease condition. The main aim of the present investigation is to carry out the clinical evaluation of the siddha formulations Seenthilchooranam (SC) for internal and Malaivembhathithailam (MT) for external therapy in management of AA.

2. MATERIALS AND METHODS

2.1. Source of raw drugs: Ingredients and other raw materials required for the formulations were purchased from a well reputed indigenous drug shop at Chennai. All raw drugs were properly identified and authenticated by the concerning authority before clinical usage.

2.2. Ingredients

The formulation Seenthilchooranam comprises of the following ingredients

1. Seenthil - *Tinosporacordifolia*
2. Karisalai - *Eclipta prostrate*
3. Earthworm - *Lumbricusterrestris*

The formulation Malaivembathithailam comprises of the following ingredients

1. Malaiveppilaisaru - *Melia azedarach.Linn*
2. Kummattikaisaru - *Citrullus colocynthis*
3. Onion juice - *Allium cepa*
4. Lime juice - *Citrus limon*
5. Amanakkuennai - *Ricinus communis*

2.3. Preparation[14-15]

Both the formulations Seenthilchooranam *and* Malaivembathithailam were prepared in accordance with the procedure as mentioned in prescribed text of Agasthiyar Vaidhyakaviyam and Theraiyar Thalia Varkkam.

2.4. Case History: A 25 years old male reported in the General Out Patient Department in National Institute of Siddha, Ayodhidoss Pandithar Hospital, Tambaram Sanatorium, Chennai, with chief complaints of hair loss in patches with exclamation point hairs on the scalp region with itching present on and off. His disease was diagnosed as “Puzhuvettu” (Alopecia Areata) by clinical evaluation and lab investigation. He came to general OPD and treated for 2 months and informed consent was obtained by the patient for receiving treatment. The total duration of symptoms was about 6 months. The patient was apparently normal before the complaints. He first observes hair loss and gradually developed patchy hair loss. There was no history of diabetes mellitus, hypertension, pulmonary tuberculosis, bronchial asthma and thyroid disorder. Family history was not significant with the patient’s disease. The patient was on irregular treatment with modern medication before 6 months. He is vegetarian and has clean habits.

2.5. Clinical Study Assessment[16-19]

The patient was subjected to the clinical investigation for evaluating the improvement in his disease condition through regular hematology, serology and urine investigations.

2.6. Drug Administration

Subject was provided with trial drug Seenthilchooranam for internal use and Malaivembathithailam for external application for the period of 60 days further they were monitored for clinical improvement and other Compliance.

Drug	Dosage	Adjuvant	Duration	Mode
Seenthilchooranam	2gms	Nattu sarkari	60 days	Internal
Malaivembathithailam	Quantity sufficient	None	60 days	External

2.7. Diet and Treatment Advice

- Consumption of water – 3 to 4 liters/day
- Adequate sleep
- Fiber rich vegetables and fruits.
- Adequate green leafy vegetables.
- Agathi, paaghal, sour and spicy diet must be avoided.

3. RESULTS

3.1. Siddha System of Investigation

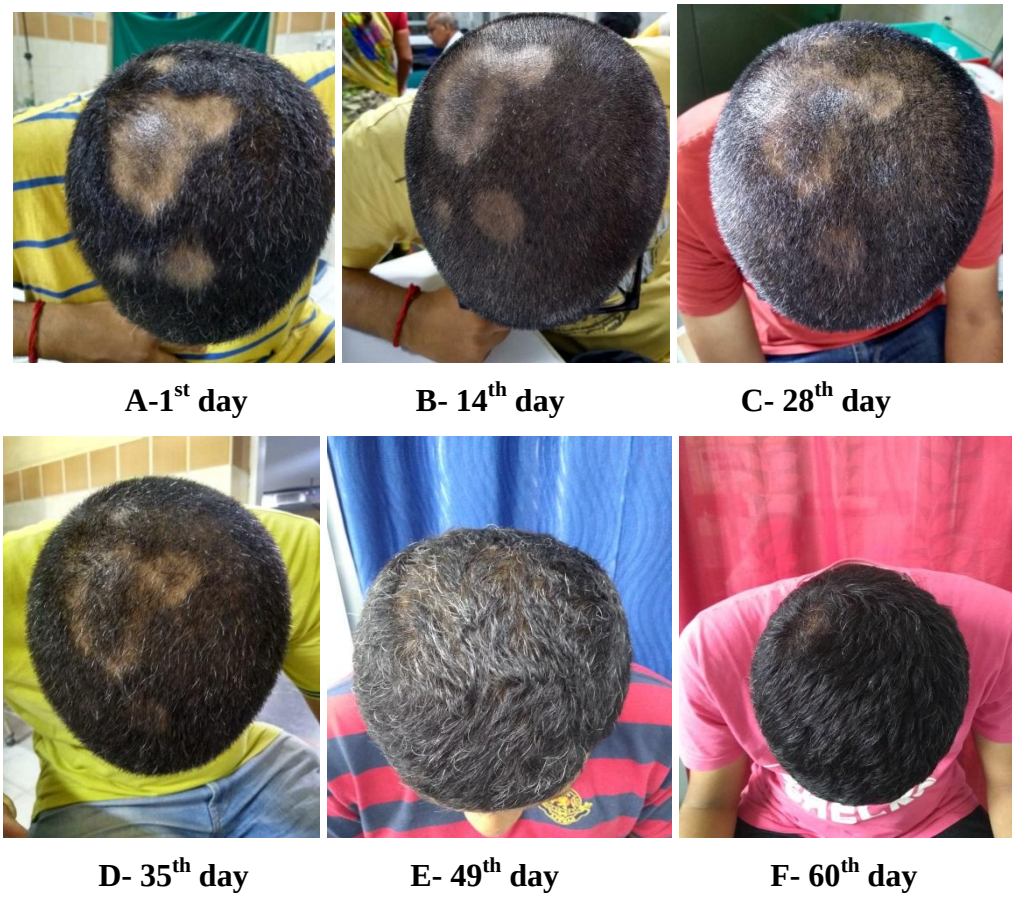
The result analysis of siddha system of investigation has shown that the patient hailed from neithalthianai (Chennai). He presented with complaints during mudhuvenilkaalam. He was rasogunam predominant, the naadi (Pulse) before and after treatment was pithavaadham, Neerkuri- the urine was dark yellow coloured, Neikuri- round shape was observed in oil on urine sign. Ranjigapitham was affected. Saaram and senneer was affected in seven udalthadhukkal.

3.2. Results of clinical investigation

Data's of clinical investigation of the subject reveals the following Hb-14.4gms%, T.WBC-5700cells/cumm, P-70, L-27, E-0.3, T.RBC-4.7millioncells/cumm,ESR-1/2hr: 40mm, 1hr: 82mm, Bbloodsugar(F)-106mg%, (PP)-118 mg %, serumcholesterol:234mg/dl, BUN-16mg/dl, serumcreatinine-1.1mg/dl, SGOT-33IU, SGPT-50IU, T3-134.2ng/dl, T4-8.18ug/dl, TSH-1.68IU/ml, VDRL-non-reactive, the urine analysis was normal.

3.3. Clinical outcome of the treatment

Clinical outcome of the therapy was measured as visual interpretation of the hair growth rate along with density and thickness of the newly projected hair at regular time point on day 1, 14, 28, 35, 49 and 60 days period. Patient recovered completely from patchy hair loss in the scalp region and there were no complaints of itching. As shown in figure 1 (A-F).



A-1st day **B- 14th day** **C- 28th day**

D- 35th day **E- 49th day** **F- 60th day**

Figure. 1: Measurable clinical outcome of siddha therapy in treating Alopecia areata (Puzhuvettu).

4. DISCUSSION

Alopecia areata is an extremely common autoimmune condition affecting hair. Severe forms of alopecia areata exist, with existing treatments consisting of systemic immune suppressants with numerous side effects. Recently, breakthroughs have been made in both understanding the pathogenesis of alopecia areata and the treatment thereof, which hold the promise of being able to target severe cases of alopecia areata with more efficacy and better tolerability. The exact cause of AA is still unknown. The current body of evidence supports an autoimmune origin and strong genetic contribution, further modified by unknown environmental influences.[20]

Multiple genetic factors contribute to the development of AA. A positive family history is evident in approximately 10% to 25% of cases.[20,21] Further support for a genetic contribution comes from a concordant twin study by Rodriguez et al, in which the percentage of monozygotes (42%) who both had AA was much greater than that of the dizygotes (10%). Extensive work has been done to determine the molecular basis of AA. Alopecia areata is considered to be a T cell–mediated autoimmune disease.[23] It is important to understand that the hair follicle is fundamentally considered a site of immune privilege, whereby a number of mechanisms tightly control immunologic access and prevent it from autoimmune attack under normal conditions. The development of AA is thought to result from a breakdown of this immune-privileged site.[24]

A groundbreaking study from 2010 provided a deeper understanding of the genetic basis of AA. By comparing 1054 patient cases and 3278 controls, Petukhova et al discovered 139 single-nucleotide polymorphisms related to the development of AA.[25] Further investigation located 8 genes highly correlated with the risk of disease. Interestingly, several of these "susceptibility loci" are thought to play a role in other autoimmune processes such as type 1 diabetes and rheumatoid arthritis, helping to once again strengthen the autoimmune hypothesis for AA.

The efficacy of many treatment methods has been questioned by many scientific authorities due to the lack of reliable clinical studies. The decision on systemic treatment depends on the type of hair loss, the extent of changes, general health status, the patient's age and motivation, and concomitant diseases. Treatment methods should be chosen individually for each patient. The disease course is difficult to predict because spontaneous remissions are frequently observed, while in about 5% of cases the disease progresses into total alopecia, and in 1% of cases into universal alopecia. After completed treatment patients must be informed about the high risk of disease relapse. In emotionally unstable patients, each exacerbation of hair loss symptoms may lead to a depression phase. In patients with psychoneurotic disorders, increased hair loss is an underlying symptom of psychopathic personality. In frequent cases, patients may have difficulties in interpersonal relations at the workplace or in their private life (withdrawal from active social life).[26]

Traditional medicine, also called complementary or alternative medicine, natural medicine, nonconventional medicine, or holistic medicine, has always maintained its popularity worldwide. Over the last decade, we have seen its increasing use in many developed and

developing countries. Currently, as a main part of traditional medicine, herbal medicine can be prescribed as drugs by doctors in some countries, such as China, India, and Germany, but only be used as dietary supplements in other countries, such as the United States. Clinical outcome of the present siddha therapy was measured as visual interpretation of the hair growth rate along with density and thickness of the newly projected hair at regular time point on day 1, 14, 28, 35, 49 and 60 days period. Patient recovered completely from patchy hair loss in the scalp region and there were no complaints of itching.

5. CONCLUSION

Alopecia Areata is a disease with high emotional impact, able to reduce the quality of life of patients and their family entourage. It is often frustrating for those affected due to its evolution quite unpredictable and the mixed response to the few validated therapies. It became utmost responsibility of the therapist to rescue the patient from the undesirable side effects caused by the conventional allopathic treatment. Siddha system of traditional medicine with its componential formulations offered wide variety of the benefits for the mankind since several centuries. Recent literature evidence has suggested that siddha drugs came to lime light for management of several chronic disorders. Result of the present investigation become an evidence based result that treatment of AA patient with siddha drugs Seenthilchooranam and Malaivembhathithailam as an internal and external medication shown significant improvement in hair proliferation rate almost to that of the normal range with no side effect. Hence from this it was concluded that siddha drugs may be considered as a good drug of choice for clinical management of AA. Further studies needs to be carried out to ensure the underlying mechanism of action of both these formulations.

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