

## TREATMENT OF ALOPECIA AREATA WITH TOPICAL GARLIC EXTRACT

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Keywords: Alopecia areata, Garlic extract

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Abstract

Background: Alopecia areata is a common autoimmune disease characterized by patchy hair loss. Garlic extract has been reported to have immunomodulatory and antioxidant properties, which may be beneficial in the treatment of alopecia areata.

Objective: To evaluate the efficacy of topical garlic extract in the treatment of alopecia areata.

Method: A randomized, controlled trial was conducted. Fifty patients with alopecia areata were divided into two groups: the study group (n=25) received topical garlic extract, and the control group (n=25) received a placebo. The patients were followed up for 12 weeks.

Results: The study group showed a significant improvement in hair regrowth compared to the control group. The percentage of hair regrowth in the study group was significantly higher than in the control group at the end of the study.

Conclusion: Topical garlic extract is an effective treatment for alopecia areata.

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**SUMMARY:**

**BACKGROUND:**

Alopecia areata is a non scarring localized hair fall, probably of autoimmune aetiology, that responds to treatment with many topically applied irritant substances. Garlic had been known for a long time by its unique chemical composition that has many pharmacological implications.

**AIM of STUDY:**

To determine the efficacy of topical garlic extract in the treatment of alopecia areata.

**PATIENTS & METHODS:**

Ten patients complaining of single or multiple patches of alopecia areata on the scalp region (total of 18 patches) were enrolled in this study from July 2006 to July 2007, in the out patient clinic in Najaf city. All patches were treated by topical garlic extract twice daily, for two months. Re-growth of terminal coarse hairs was evaluated every two weeks.

**RESULTS:**

Four females and six males were studied, their ages ranged from 10 – 45 years (mean 27 yrs.). Total of 18 patches of alopecia areata were treated. All patients (100%) responded to this treatment. Hair growth started by the end of second week in eight patches (44.4%), within four weeks in seven patches (38.9%), and within six weeks in three patches (16.7%). Erythema was observed in all patients, in addition to itching in 8 patches (44.4%) and burning sensation in 5 patches (27.7%).

**CONCLUSIONS:**

Garlic is an efficient and rapid topical treatment for alopecia areata. It is cheap, available and with negligible side effects.

**INTRODUCTION:**

Alopecia areata is characterized by round or oval patches of nonscarring hair loss. Men and women are equally affected and the prevalence is almost the same for all ethnic groups<sup>[1],[2],[3]</sup>. It is a common disease and at any given time, about 0.2% of people are involved with alopecia areata and 1.7% of the populations experience an episode of alopecia areata during their lifetime<sup>[4],[5],[6]</sup>. The etiology and pathogenesis of alopecia areata is still uncertain, but many factors have been described in its pathogenesis, e.g., genetic, family history, the atopic state, nonspecific immune and organ-specific autoimmune reactions, possible emotional stress, infectious agents and neurological factors. A range of treatments have been tried for the treatment of alopecia areata, such as contact sensitizers, immunomodulators and biologic response modifiers<sup>[7],[8],[9],[10],[11]</sup>. Though different medications with various efficacies have been used for long, no definitive treatment has been introduced yet<sup>[1]</sup>. Garlic, onion and aromatherapy are claimed to have hair growth promoting properties but the scientific basis is still lacking<sup>[12],[13],[14]</sup>. Bacteria, fungi, protozoa and viruses have been shown to be sensitive to crushed garlic preparations. Moreover, garlic has been reported to reduce blood lipids and to have anticancer properties. The main active component present in large quantities in garlic cloves is alliin, an oxygenated sulfur amino acid. In crushed garlic, alliin is converted to allicin, which gives the garlic therapeutic properties<sup>[15],[16]</sup>. Our study is based on anecdotal evidence of garlic therapy that several patients have had marked improvement with this form of therapy. The aim in this study was to test the hypothesis suggesting the presence of

pharmacologically active stimulants of hair growth in garlic and that garlic can be a therapeutic agent in patients involved with alopecia areata.

Duration of Treatment	No. of cured patches	Percentage
Two Weeks	8	44.4%
Four Weeks	7	38.9%
Six Weeks	3	16.7%

**AIM OF THE STUDY:**

To determine the efficacy of topical garlic extract in the treatment of alopecia areata.

**PATIENTS AND METHODS :**

This study was a therapeutic trial to test the efficacy of topical garlic extract for two months in patients with alopecia areata. The study was carried out between July 2006 and July 2007 , in the out patient clinic in Najaf.

*Plant material:* Allium sativum L. The garlic was blended and the extract was achieved by crushing. Garlic extract was rubbed on the alopecia patches, twice daily for two months. Re-growth of terminal coarse hairs was evaluated every two weeks.

patients selected met the inclusion criteria of the study. Inclusion criteria included patients above five years of age, having up to three hairless patches, overall extension of patches less than 10 cm<sup>2</sup> and duration of disease less than one month. The patients with history of previous treatment, pregnant and lactating women, eyelash and eyebrow involvement, ophiasis pattern and history of sensitivity to garlic were excluded from the study.

Before enrolment, patients were not receiving treatment with any form of topical or systemic medication.

**RESULTS:**

Ten patients were enrolled in this study according to the inclusion criteria, four females and six males .Their ages ranged from 10 - 45 years (mean 27 yrs.). All of them completed the procedure.

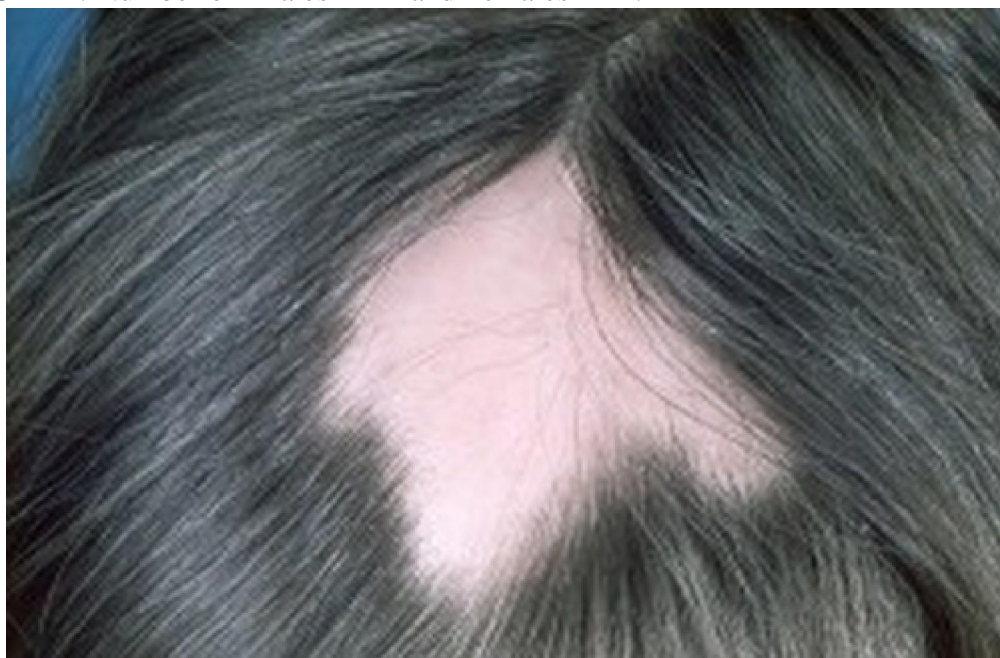
Total of 18 patches of alopecia areata were treated. All patients (100%) responded to this treatment. Hair growth started at the end of second week of treatment in eight patches (44.4%), after four weeks in seven patches (38.9%), and within six weeks in three patches (16.7%). Erythema was observed in all patients, in addition to itching in 8 patches (44.4%) and burning sensation in 5 patches (27.7%).

The results are illustrated in Table 1, Figure 1, Figure 2 and Figure

TABLE 1: Course of treatment of alopecia areata



FIGURE 1: Number of Males and Females .



A

B



**Figure 2: Alopecia areata before (A) and four weeks (B) after treatment.**



A

B



**Figure 3: Alopecia areata before (A) and six weeks (B) after treatment.**

#### **DISCUSSION:**

In this study, hair growth was observed in all patients, no significant complications were observed.

Unfortunately, only a few studies have been done about the effectiveness of garlic components in managing alopecia areata. Garlic is used all over the world for different diseases. In Traditional Iranian Medicine (TIM), garlic was prescribed as a remedy for different diseases such as infections, cancers, injuries, gastrointestinal dysfunctions and cardiovascular diseases. Some therapeutic mechanisms of garlic are not clear. The hair growth stimulating mechanisms of garlic are unknown yet. Different researchers have shown that alopecia areata is marked by autoimmune assault on the hair follicle resulting in hair loss<sup>[17],[18]</sup>. The modulatory effects of garlic on immune responses<sup>[19],[20],[21],[22],[23]</sup> may justify its efficacy in alopecia areata. In a comparative study by Sharquie et al., crude onion juice applied topically in treatment of patchy alopecia areata was compared with tap water; it was found that it can be effective in treatment of alopecia areata<sup>[16]</sup>. Onion and garlic belong to a widely grown vegetable family named Asparagus. Both of them contain diallyl disulfide, which may provide their therapeutic effects<sup>[23]</sup>. Though different modalities of treatment, local and systemic, have been used to induce hair re-growth, all of them have their own complications and efficacies. The high spontaneous remission rate of alopecia areata, sometimes makes it difficult to clearly assess the true efficacy of a given therapy<sup>[3]</sup>. In conclusion, this study demonstrates that topical garlic extract treatment may be effective and well tolerated in alopecia areata patients and provides prolonged therapeutic benefits.

#### **CONCLUSION:**

Garlic extract proved to be an effective topical treatment modality for early alopecia areata.

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