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COMPARATIVE STUDY OF TOPICAL PHENOL, MINOXIDIL AND INTRALESIONAL STEROID IN TREATEMENT OF ALOPECIA

Medical Science

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ABSTRACT

Introduction: Alopecia areata refers to a common condition of undetermined etiology and unpredictable outcome characterized by circumscribed, non scarring areas of baldness on the scalp, eyebrows, eyelashes, bread, moustache area or hairy skin any where on the body.

Material and Methods: The patients grouped in regimens of topical minoxidil (self administered) and the patient grouped in intralesional steroid and topical phenol application were asked to follow up every 3 weeks interval for intralesional injection and topical application of phenol.

Aims and objective: to compare the effect of Phenol, Minoxidil and intralesional steroid on patients of Alopecia.

Results: Rate of obtaining excellent response was highest with intralesional triamchinolone 78.57% patient showed excellent response by end of 6 months of follow up. Second highest rate was obtained with topical phenol 60% patients with this treatment showed excellent response by end of 6 month. With minoxidil, 50% patients showed excellent response by end of 6 months of follow up.

Conclusion: Intralesional triamcinolone and topical phenol can offer excellent result in quiet short duration, but incidence of side effect is more with topical phenol.

KEYWORDS

INTRODUCTION:

Alopecia areata is a dermatological disorder that has been recognized for more than 2000 years. The condition was first described by Celsus (14-37 A.D.)[1]. It is a common problem in primary care practice.

Alopecia areata refers to a common condition of undetermined etiology and unpredictable outcome characterized by circumscribed, non scarring areas of baldness on the scalp, eyebrows, eyelashes, bread, moustache area or hairy skin any where on the body. It effects both sexes and almost all age groups. Sometimes the disease is more extensive and may then cause near total or total loss of scalp hairs, when severe, hairs all over the body may be lost. Exact etiology of alopecia areata is not known, but factors responsible are autoimmunity, patients genetic constitution, the atopic state, non-specific immune reactions and possibly emotional stress. The recovery from hair loss may be complete, partial or none.

Various modalities of treatment are available, in the form of local stimulators with caustics, intralesional and topical corticosteroid therapies, topical contact sensitizers like dinitrochloro-benzene or diphencyprone, psoralens followed by ultraviolet A exposure (PUVA), systemic corticosteroids, topical minoxidil and immunostimulation have all been used with variable success, but each therapy has its own advantages and disadvantages also.

Intralesional steroid is a painful procedure and alopecia areata being more common in children, many difficulties arrives while doing this procedure. Even topical and intralesional steroid has side effects in the form of atrophy of skin, telangiectasia and in addition to this oral steroid also has systemic side effects. A chemical known as carbolic acid (phenol) is used as a skin irritant in treatment of alopecia areata. Liquefied phenol is cheap, easy to apply, less painful procedure, requiring only once in three week. It has minimal side effects with (0.5ml-1.0ml) less quantity. Topical minoxidil 5% lotion is also used in treatment of alopecia areata.

Muller and Winkelman et al[2] (1963) suggested that the genetic determinance in alopecia areata is strengthened by "youth fullness" of affected patients; however, there are numerous genetic disease with onset later in life.

The incidence of family history of alopecia areata is about 4- 27% [3,4] .

MATERIAL AND METHODS:

The present study was carried out in the department of Dermatology, Nehru Hospital, B.R.D. Medical College, Gorakhpur. A total number of 50 patients attending the Dermatology O.P.D. included in this study.

A detailed history was recorded with particular emphasis on site of involvement, treatment history, family history including parents, brothers, sisters, siblings, uncles, aunts and cousins. A complete clinical examination of patients was performed in good day light with stress upon morphology of each lesion, eye and nail changes, associated dermatological conditions and other diseases. A few hairs from the margin of alopecia areata lesion were plucked randomly and examined under the low power of light microscope.

The patients were randomly allocated to receive different treatment regimens. The patients grouped in regimens of topical minoxidil (self administered) and the patient grouped in intralesional steroid and topical phenol application were asked to follow up every 3 weeks interval for intralesional injection and topical application of phenol.

Intralesional Triamchinolone Acetonide (10 MG/ML)

Each vial contains 10 mgs of triamcinolone acetonide which was diluted with equal amount of (1 ml) of normal saline for injection. The affected area was cleaned with sprit swab and 0.1 ml of such preparation was injected intradermally, making multiple injection spacing 0.5 cm to 1.0 cm in to the involved areas. The total dose at one sitting commonly do not exceed 20 mg of triamcinolone distributed throughout the scalp of and adult in order to avoid adrenal suppression. Injections were repeated for every 3 weeks and treatement was continued till regrowth was complete or abandoned either due to atrophy caused by injection or due to inadequate response.

Phenol

Full strength of liquefied phenol was prepared by keeping bottle containing phenol crystal in hot water (liquefied phenol or 88%). The area to be treated was cleaned with savlon followed by sprit. In a small glass containing 0.5 ml to 1.0 ml of liquefied phenol was taken. This then applied gently with thin cotton tipped applicator by giving uniform smooth strokes, till an ivory white uniform frosting was seen. No neutralization of phenol was done in any of the patients, as it is not required in phenol peels. All patients were monitored after half an hour for pulse rate and vaso vagal syncope. The patient were asked to apply topical antibiotics twice in a day if secondary infection occurs. The application was repeated at 21 days interval. The patients were asked to come for follow up at monthly interval. On each follow up, hairs density, pigmentation, texture of hair was assessed.

Minoxidil

The patient, grouped under this regimen, were asked to apply 5% minoxidil lotion, twice daily after cleaning the area with soap and water and it was allowed to get completely dried for 2 to 4 hour. It is important to tell the patients about the side effects like redness, itching or burning of scalp, which may occur following minoxidil application and the drug may be washed off and doctor may be contacted if the side

effect appears. The patients were asked to come for follow up monthly. Hair density and texture of hari was observed in each visit.

The result of study have been evaluated on the basis of investigators clinical assessment and photographic assessment. The patients were followed up for period of six months and response was classified as follow:

Grade	Description
0 (Zero)	No hair growth
1	1-25% area of patch covered with hair i.e. mild hair growth
2	26-50% area of patch covered with hair i.e. moderate hair growth
3	51-75% area of patch covered with hair i.e. good hair growth
4	76-100% area of patch covered with hair i.e. excellent response.

RESULTS:

The present study was conducted on 50 patients of alopecia areata, attending the Dermatology O.P.D. of Nehru Hospital, attached to B.R.D. Medical College, Gorakhpur. The observation of patients are depicted in the forms of table. Male predominance with ratio of 1.8:1. maximum number of patients in the age group of 21- 30 years (32.0%), While the minimum number of patients was in age group of 41-50 years (10%). maximum number of patients 18 (36.0%) had hair loss of 0-6 month duration. maximum number of patients having hair loss on scalp (56.0%) followed by patients having hair loss on bread (28.0%). family history was positive in 4 (8.0%) patients.

20 patients were treated by Topical Phenol (88.0%), 14 patients were treated by I/L Triamcinolone 10 mg/ml and16 patients were treated by topical minoxidil (5%) (Table 1). In six months of follow up after phenol application, 12 (60.0%) patients showed excellent response, while 2 (10.0%) patients showed poor response (table 2). Six months of follow up Triamcinolone application, 12 (60.0%) patients showed excellent response, while 2 (10.0%) patients showed poor response (Table 3).

Six months of follow up after minoxidil application, 8 (50.0%) patients showed excellent response, while 2 (12.5%) patients showed p o o r response (Table 4). Rate of obtaining response was highest with intralesional triamcinolone (78.57%) followed by Topical Phenol (60.0%) and Topical Minoxidil (50.0%) (Table 5). Side effects were more common with topical phenol followed in decreasing order by intralesional triamcinolone and topical minoxidil (Figure 1).

DISCUSSION:

Alopecia areata is a common, usually reversible, condition that is characterized by a patchy loss of hair without atrophy. There is no universally proven treatment for alopecia areata which is evident from the multiplicity of claims for therapeutic success.

In the present study, males (64.0%) out numbered females (36.0%). Male to female ratio was 1.8:1. Muller HK et al[2] (1963) reported almost equal sex incidence.

In the present study, age of patients ranged from 5 years to 48 years. Maximum number of patients was 16 (32.0%), who were of the age group 21-30 years. Muler and Winkelman et al[2] (1963) reported 43.7% of patients under the age of 30 years.

In the present study, 12 (60.0%) patients out of 20 who were treated by topical phenol reached the mark of excellent result (more than 76.0% area of hair growth) Savant et al[5] (1999) reported 72.5% out of 69 patients of alopecia areata showing good regrowth and 27.5% showing poor growth. Other workers like Bechet Paul et al[6] (1937) used full strength phenol in alopecia areata with good result.

In the present study, 11 patients (78.57%) out of 14, on treatment with I/L triamcinolone, achieved excellent result (>76.0%) area of hair growth According to Porter D and Burton JL et al[7] (1971) reported tuft of hair growth in 33 of 34 sites injected with triamcinolone hexacetonide in 11 patients of alopecia areata, Kubeyinge EP et al[8] (1994) reported 62.0% of patients showing full regrowth with monthly injections of triamcinolone.

In the present study, 8 (50.0%) patients out of 16, who were treated by topical minoxidil showed excellent response (>76.0% area of h a i r growth), Fenton DA et al[9] (1982) reported high success rate of topical minoxidil in alopecia areata. In a study of Weiss et al[10] (1981) local hair growth occurred in two out of three patients within 4-6 weeks of treatment.

CONCLUSION:

Intralesional triamcinolone and topical phenol can offer excellent result in quiet short duration, but incidence of side effect is more with topical phenol. Intralesional triamcinolone shows better result specially on alopecia areata involving eyebrows, beard and moustache area.

Tables and figures:

Table 1 Distribution of patients according to treatment modalities

Group	No. of patients	Treatment modalities
I	20	Liquefied phenol (88.0%)
II	14	I/L Triamenolone (10mg/ml)
III	16	Topical Minoxidil (5.0%)

Table 2: Result of topical phenol application

Type of result	Excellent (%)	Good (%)	Moderate (%)	Mild (%)	Poor (%)	Total
No. of patients after 2 months	08 (40.0)	06 (30.0)	03 (15.0)	01 (05.0)	02 (10.0)	20
No. of patients after 2 months	10 (50.0)	05 (25.0)	03 (15.0)	_	02 (10.0)	20
No. of patients after 2 months	12 (60.0)	04 (20.0)	02 (10.0)	_	02 (10.0)	20

Table – 3 Result of intralesional triamcinolone

Type of result	Excellent (%)	Good (%)	Moderate (%)	Mild (%)	Poor (%)	Total
No. of patients after 2 months	08 (40.0)	06 (30.0)	03 (15.0)	01 (05.0)	02 (10.0)	20
No. of patients after 2 months	10 (50.0)	05 (25.0)	03 (15.0)	_	02 (10.0)	20
No. of patients after 2 months	12 (60.0)	04 (20.0)	02 (10.0)	_	02 (10.0)	20

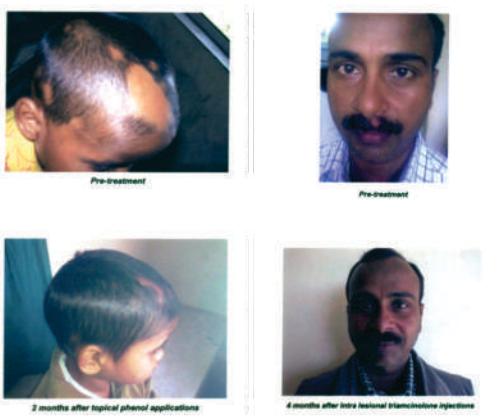
Table – 4 Result of topical minoxidil

Type of result	Excellent (%)	Good (%)	Moderate (%)	Mild (%)	Poor (%)	Total
No. of patients after 2 months	04 (25.0)	06 (37.5)	04 (25.0)	_	02 (12.5)	16
No. of patients after 2 months	06 (37.5)	06 (37.5)	02 (12.5)	_	02 (12.5)	16
No. of patients after 2 months	22 (55.0)	04 (25.0)	02 (12.5)	_	02 (12.5)	16

Table – 5 Result of obtaining excellent response by various treatment modalities

No. of patients of various treatment modalities	Duration		
	2 months (%)	2 months (%)	2 months (%)
Topical phenol	80 (40.00)	10 (50.00)	12 (60.00)
I/L triamcinolone	60 (42.85)	08 (57.14)	11 (78.57)
Topical minoxidil	04 (25.00)	06 (37.50)	08 (50.00)

Figure 1 : Pictures showing growth of hair after drug application



Pre-treatment

5 months after topical minoxidil applications

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