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Original Research Article

Comparative Efficacy of Intradermal Triamcilone Acetonide and Distilled Water in the Treatment of Alopecia Areata

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Abstract: Introduction; The problem of hair loss seems to be very common since ages. It is normal to lose between 50-100 hairs a day as a part of the hair renewal process, however most people suffer from excessive hair loss at one time or other in their life. The Oxford dictionary defines 'Alopecia' as 'the partial or complete absence of hair from areas of the body where it normally grows; baldness. **Materials and Methods:** A prospective study will be conducted on 50 patients of alopecia areata, attending outdoor patient department of Skin, STD and Leprosy, SP Medical College & PBM Hospital, Bikaner. In each patient the patches of hair loss will be divided into two groups. Group A lesions will receive intradermal injections of 10mg/ml of Triamcinolone acetonide while Group B lesions will receive intradermal injections of distilled water. **Results**: Out of the total of 50 patients, 46 i.e. 92% of the patients in Group A showed an good to excellent response (90% excellent response and 2 % good response) to triamcinolone acetonide injections. In comparison to this in Group B, 32 patients i.e. 52% showed good to excellent response (32%- good response and 20 %- excellent response).**Conclusion**: In conclusion, we find that intradermal triamcinolone is the better, well established modality giving reliable and early response and remains the treatment of choice for limited alopecia areata**.**

Keywords: Alopecia, Triamcinolone acetonide, distilled water.

INTRODUCTION

The problem of hair loss seems to be very common since ages. It is normal to lose between 50-100 hairs a day as a part of the hair renewal process, however most people suffer from excessive hair loss at one time or other in their life. The Oxford dictionary defines 'Alopecia' as 'the partial or complete absence of hair from areas of the body where it normally grows; baldness' (Defination of alopesia). The term 'Alopecia' first used by Hippocrates is derived via Latin from Greek alōpekia, literally 'fox mange', from alōpēx 'fox. Patients suffering from alopecia form a large proportion of the people seeking dermatologist's Alopecia areata (AA) clinically is a non scarring alopecia, characterized by a patchy loss of hair without skin atrophy (Galán-Gutiérrez, M. *et al.*, 2009). It affects both sexes and all racial groups and may present at any age but is more common in children and young adults (Dombrowski, N.C., & Bergfeld, W.F. 2005). The life-time risk of AA in the general population is approximately 1.7% Opinion (Safavi, K.H. *et al.*, 1995). Alopecia Areata is an autoimmune disease that involves the hair follicle. Genetic, environmental and immunological factors interplay in the autoimmunity seen in alopecia areata (Alexis, A.F. *et al.*, 2004). Various therapeutic agents have been described for the treatment of alopecia areata. This includes topical, intralesional and systemic therapies. Intradermal corticosteroids were first described in 1958 with the use of hydrocortisone and are recommended as first line of therapy in UK and USA (Kalkoff, K.W., & Macher, E. 1958; Harries, M.J. *et al.*, 2010; and Sawaya, M.E., & Hordinsky, M.K.

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1995). For adult AA patients with less than 50% scalp involvement, an intradermal corticosteroid with triamcinolone acetonide is considered first-line therapy. Although intradermal corticosteroids have been used in the treatment of AA for about 50 years, there are no published randomized controlled trials and as such, are the need of the hour (Mandani, S., & Shapiro, J. 2000; Norris, D. 2004). For this purpose we plan to conduct a randomized clinical trial to evaluate, 'Comparative Efficacy of Intradermal Triamcinolone acetonide and Distilled Water in the Treatment of Alopecia Areata'.

MATERIALS AND METHODS:-

A prospective study will be conducted on 50 patients of alopecia areata, attending outdoor patient department of Skin, STD and Leprosy, SP Medical College & PBM Hospital, Bikaner. In each patient the patches of hair loss will be divided into two groups. Group A lesions will receive intradermal injections of 10mg/ml of Triamcinolone acetonide while Group B lesions will receive intradermal injections of distilled water.

INCLUSION CRITERIA:

- Patients with even number of patches of alopecia areata on scalp or elsewhere.

EXCLUSION CRITERIA:

- Below 10 and above 60 years of age.
- Patients who received any treatment in the past for alopecia areata.
- Rapidly progressive or extensive disease.
- Pregnant and lactating women.
- Patients with any concurrent systemic diseases.
- Patients with superadded secondary infections.
- History of hypersensitivity to Triamcinolone acetonide.

Diagnosis:

The patients will be diagnosed on the basis of typical clinical features:

Treatment Modalities:

The modalities to be used are Triamcinolone acetonide (10 mg/ml) and distilled water. The patches of hair loss in each patient will be divided into two groups. Group A patches will receive intradermal injections of Triamcinolone acetonide(10 mg/ml) while Group B patches will receive intradermal injections of distilled water.

Follow up:

The patients will be followed up for a period of 12 weeks afterwards on a 4 weekly basis to record hair regrowth and any adverse effects.

Results:

The patients will be evaluated for

- Hair regrowth based on clinical inspection and clinical photographs.

The regrowth of hair was graded from 0 to 4 as follows

0- No growth
1- Upto 25% ~ mild
2- 26 to 50% ~moderate
3- 51-75% ~good
4- 76-100% ~excellent

Our study on alopecia areata spanned over a period of one year from January 2012 to December 2012.The following observations were made during the course of our study.

We included 50 untreated patients of alopecia areata; 28 male and 22 female, with even number of patches making it 136 patches in total.(TABLE 1).

35(20 male and 15 female) of the patients had 2 patches, 12 (6 each of male and female) had 4 patches and 3 (2 male and 1 female) had 6 patches.(TABLE 2)

Out of the total of 50 patients, 46 i.e. 92% of the patients in Group A showed an good to excellent response (90% excellent response and 2 % good response) to triamcinolone acetonide injections. In comparison to this in Group B, 32 patients i.e. 52% showed good to excellent response (32%- good response and 20 %- excellent response). One patient (2%) in Group A and 15 patients (30%) in Group B did not respond to treatment at all. (Table 4, Figure 2 & 3)

The Group A patches treated with triamcinolone acetonide showed early response with most of the patients achieving excellent response by the 6^{th} week. The mean hair regrowth grade at 6 weeks was 3.15 which reached upto 3.53 at the end of the follow up period.

The Group B patches treated with distilled water showed a relatively slower response. The patients who responded to this line of treatment did so by 12^{th} week when the mean hair regrowth grade was 1.5. At the end of last follow up at 20^{th} week a mean grade of 1.66 was achieved.(TABLE 5)

Table-1 .Sex Wise Distribution of Patients

	Total (n=50)	Percentage
Male	28	56%
Female	22	44%

Table- 2. Distribution of Number of Patches According To Sex of Patients:

No. of patches	Male	Female	Total
2	20	15	**70**
4	6	6	**48**
6	2	1	**18**
Total:-	**76**	**60**	**136**

Table-3. Distributions of Patients According To Final Hair Regrowth Grade

	Group A		Group B	
	No.of patients	Percentage	No.of patients	Percentage
Grade 0	1	2%	15	30%
Grade 1	2	4%	5	10%
Grade 2	1	2%	4	8%
Grade 3	1	2%	16	32%
Grade 4	45	90%	10	20%

Table- 4. Means Hair Regrowth Grades At Each Visit:

	Group A	Group B
0 wk	0	0
2 wks	0.6176471	0.0882353
4 wks	1.7794118	0.2647059
6 wks	3.1470588	0.5294118
8 wks	3.4117647	0.8676471
12 wks	3.5	1.5
16 wks	3.5151515	1.6617647
20 wks	3.5294118	1.6617647

DISCUSSION

Kalkoff K W and Macher E were the first authors to advocate the use of intralesional corticosteroids in the treatment of alopecia areata in their paper titled 'Growing of hair in alopecia areata and maligna after intracutaneous hydrocortisone injection' published in 1958. In India there is a practice of applying onion syrup to the alopecia areata sites to stimulate growth. This treatment is said to bring about good results in many of the patients. Supposedly it acts by irritation of the applied area, as irritants have been reported to be effective in the treatment of alopecia areata. An intalesional injection of distilled water could also stimulate hair growth due to its irritant or osmotic properties or by an action similar to micro needling and may form a cheaper treatment modality than triamcinolone acetonide. Porter and Burton showed that hair regrowth was possible in 64 to 97% of AA sites treated by intradermal injections of triamcinolone acetinoide and its less-soluble derivative, triamicinolone hexacetonide, respectively (Porter, D., & Burton, J.L. 1971). Abell and Munro reported that 52 of 84 patients (62%) showed regrowth of hair at 12 weeks after single injection of triamcinolone acetonide, using the Porto Jet needleless device, compared to one of 15 (7%) subjects injected with isotonic saline (Abell, E., & Munro, D.D. 1973). In our study the triamcinolone acetonide injection gave an excellent response in 90% of the patients and was associated with very little side effects. This is consistent with the earlier studies and it can be said to deserve the status of first line of therapy in limited alopecia areata. The treatment of alopecia areata patches with intralesional distilled water showed more than 50% hair regrowth in 52% of the patients. 20% of the patients excellent response with near complete hair regrowth. The time required for response was a little more than that for triamcinolone acetonide with most of the patients responding by 12 weeks when the mean hair regrowth grade was 1.5. At the end of last follow up at 20th week a mean grade of 1.66 was achieved.

SUMMARY AND CONCLUCION

In conclusion, we find that intradermal triamcinolone is the better, well established modality giving reliable and early response and remains the treatment of choice for limited alopecia areata. Intalesional injection of distilled water provide good response in many patients and are worthy of a try in those who do not have the means for triamcinolone acetonide injections.

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