



“COMPARATIVE STUDY OF EFFICACY OF TOPICAL SILICONE GEL AND INTRALESIONAL TRIAMCINOLONE IN TREATMENT OF KELOID”

General Surgery

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ABSTRACT

INTRODUCTION: Keloid is a common wound healing disorder encountered in post surgery, burn and even minor injury such as ear piercing. The greatest morbidity in treatment of keloid is its high chances of recurrence post surgery. It creates a great challenge in the management of keloid. Following any trauma and surgery, the wound healing generally takes place and is completed by 6-12 months. In some patients this process is delayed and extends beyond 1 year and the excess scar formation occurs.

AIMS AND OBJECTIVES: There are different modalities for the treatment of keloid. None of these modalities provides 100% efficacy in managing lesions. Different modalities have highly varying efficacy among themselves. So the objective of this study is to compare the efficacy of Intralesional Triamcinolone and topical silicon gel in management of keloid.

METHODOLOGY: Sixty patients of keloid attending the outpatient Department of Surgery, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga, Bihar, constituted the source of data for a period of 2 years from January 2019 to December 2020. This study included two different treatment regimens with 30 patients in each group.

RESULTS AND ANALYSIS: the students constituted the maximum number of cases i.e 38.3 % followed by housewife 30.0%, farmers 18.3%, labourer 6.7%, others 6.7%. respectively. however the occupation in the prevalence of disease is not significant (p value >0.05). In majority of patients the duration of lesion was between 1 and 2 years (65 %) followed by <1 years (23.33%). Minimum number of patients were in >2 years (11.67 %) of duration. The range of duration of lesions was 6 months to 2.5 years.

SUMMARY AND CONCLUSION: The both modalities of treatment was more effective in treating smaller size and shorter duration of lesion than massive keloids. Thus keloids are more common in female, over the presternal region and mostly present in third decade of life. Both Intralesional Triamcinolone and Topical silicon gel are effective in treating keloid with minimal side effective. Relatively better responses was seen with using Intralesional Triamcinolone than silicon gel. But silicon gel had advantage that it can be used by patient itself and lesser frequency of hospital visits for administration.

KEYWORDS

Topical Silicone Gel, Intralesional Triamcinolone and Keloid

INTRODUCTION

Keloid is a common wound healing disorder encountered in post surgery, burn and even minor injury such as ear piercing.

The greatest morbidity in treatment of keloid is its high chances of recurrence post surgery. It creates a great challenge in the management of keloid.¹

Following any trauma and surgery, the wound healing generally takes place and is completed by 6-12 months. In some patients this process is delayed and extends beyond 1 year and the excess scar formation occurs. These scars are hyperpigmented, elevated in comparison to normal tissues and are extended beyond the margin of scar into normal tissues and generally fails to heal spontaneously and are often associated with pruritis and joint restricted mobility if it involves the joints. Such excess scar due to abnormal collagen deposition and wound healing is keloid. In contrast to keloid, the hypertrophic scar does not extend beyond the scar to normal tissues and often heals spontaneously.

Keloids often occur on the chest, shoulders, upper back, back of the neck, and more frequently on earlobes with the posterior aspect of the ear lobe being the most common site involved, which is under minimal tension. In addition keloids appear rarely on the palms or soles, where we would expect significant skin.²

There are a number of treatment modalities available for the management of keloid. No modalities are successful in managing keloids and preventing recurrences in all cases being treated.

Commonly used modalities of treatments are:-

Surgical Excision:- It has very high recurrence rate ranging from 45-100%, so this modality is nowadays rarely used alone and are often combined with other modalities.

Intralesional steroid like triamcinolone:- Intralesional steroids are considered the first line in the treatment of keloid scars. Multiple injections at intervals of 4 to 6 weeks are required. This can be given alone or combined with other modalities.

Cryotherapy:- Multiple treatments are required. Freeze-thaw cycles of 10 to 20 seconds are recommended to achieve scar tissue necrosis.

Radiotherapy:- - Best utilized as adjuvant therapy 24 to 28 hours following excision. Caution should be used in patients less than 18 years of age and in vulnerable areas such as the head, neck, and breast as it carries an inherent risk of carcinogenesis.³

Laser:- Used to precise excision of scar tissues.

Other modalities such as Intralesional 5-fluorouracil Topical silicon gel, Imiquimod following surgical excision, or Combination of these modalities has been tried with varying success.

Surgical excision is these most commonly associated with local recurrence and also often more rapid extension and disfigurement resulting in poor aesthetic values.

It is important to manage patient expectations as all treatments require multiple sessions and do not uniformly result in complete regression of keloid. The most successful treatment results from the use of multiple modalities and tailoring therapy to meet patient needs. But none of these modalities are effective in controlling recurrence in all cases.

There is great dilemma in treatment of keloid and meeting the expectations of patients knowing its high chance of recurrence following the surgical excision of the scar tissue and ineffectiveness of few other modalities. Also most of the data available on treatment so far is based on the works done in foreign countries which does not work the same way to Indian population.⁴

My study is designed to compare the efficacy of intralesional triamcinolone injection and topical silicon gel in the management of keloid.

AIMS AND OBJECTIVES

There are different modalities for the treatment of keloid. None of these modalities provides 100% efficacy in managing lesions. Different modalities have highly varying efficacy among themselves.

So the objective of this study is to compare the efficacy of Intralesional Triamcinolone and topical silicon gel in management of keloid.

METHODOLOGY

Sixty patients of keloid attending the outpatient Department of Surgery, Darbhanga Medical College and Hospital, Laheriasarai; Darbhanga, Bihar, constituted the source of data for a period of 2 years from January 2019 to December 2020. This study included two different treatment regimens with 30 patients in each group.

A complete physical and clinical examination was carried out at the commencement of therapy. The photographs of keloid were taken before the treatment was initiated and in subsequent visits during the course of treatment.

Information collected in the routine clinical history, patient's age, sex, occupation, duration, site of the lesion, number of lesions, family history and treatment taken previously. The size of the lesion was measured using vernier caliper scale.

All the patients were informed regarding the nature of the disease, course and prognosis. They were also explained regarding the need for consistent and prolonged treatment. Approval for conduction of the study was obtained from the local ethical committee.

Inclusion criteria:

- The onset of keloid following trauma, inflammation
- Patients were willing for follow up.
- Patients of age group 10-50 years.
- Duration of lesions less than 5 years.

Exclusion criteria:

- Pregnancy and lactation.
- Patients on immunosuppressive therapy.
- Patients with systemic illness like uncontrolled DM, HT, mental disorders and malignancy.
- Patients with extensive keloid (5% body surface area) following burn.
- Patients unsure about attending treatment schedule regularly.
- Patients were not willing for follow up after initial visit.

RESULTS AND ANALYSIS

In our study the number of male were 11(out of 30) and 13 (out of 30) and number of females were 19(out of 30) and 17 (out of 30) among Intralesional Triamcinolone and silicon study groups respectively. Out of total patients 60 % were female and 40 % were males, the prevalence of female were slightly more than males but were not significant (p value=0.12). It was found that the keloid is most common in younger age group population i.e 21-30 yrs old 65%, followed by 11-20 yrs 20%, 31-40 yrs 10%, >40 yrs 5%. Each subscript letter denotes a subset of Group categories whose column proportions do not differ significantly from each other at the .05 level.

We found that among the occupational groups, the students constituted the maximum number of cases i.e 38.3 % followed by housewife 30.0%, farmers 18.3%, labourer 6.7%, others 6.7%. respectively. however the occupation in the prevalence of disease is not significant (p value >0.05). In majority of patients the duration of lesion was between 1 and 2 years (65 %) followed by <1 years (23.33%). Minimum number of patients were in >2 years (11.67 %) of duration. The range of duration of lesions was 6 months to 2.5 years. The mean duration of symptoms was 1.2yrs in triamcinolone group and 1.4yrs in silicon gel group patients. It was found that the distribution of site of lesion. The most common site is chest (33.33), followed by shoulder and neck (25%), arm (13.33%), earlobe (8.33%). The difference in distribution of site of lesion was non significant (p > 0.05) among both group.

Our study shows the prevalence of family history in keloid patients. The family history was present in 11.66% of patients. The distribution of family history data among groups was non significant. The chart shows the hyperpigmentation at the site of lesion was present in all cases (100%) followed by itching 15 % and pain in 8.33% of cases. The most common predisposing factor was trauma in 36 cases (60.0%) followed by spontaneous or unknown in 11 cases (18.3%), ear piercing 5 cases (8.3%), infections and burn 4 cases (6.7%) each respectively. We found the efficacy of intralesional triamcinolone and silicon gel in the management of keloid. The efficacy of intralesional triamcinolone

was found to be superior in comparison to silicon gel. Excellent response was seen among 33.33% of cases in triamcinolone group in comparison to 13.33% in silicon gel group, similarly good response was found in 36.7% and 20.0% of cases respectively. fair response was found in 23.33% and 40 % of cases among triamcinolone and silicon gel respectively. 26.7% of cases responded poorly in silicon gel group compared to 6.66% of cases in triamcinolone group.

Our study showed that the most common complication seen among the study groups was recurrence which was 20% and 30% among Intralesional triamcinolone and topical silicon gel groups respectively. Hypopigmentation was seen in 6 % and 3.33% respectively in triamcinolone and silicon gel groups. Anaphylactic or skin sensitivity was not seen in any of patients. none of the cases required hospital admission for managing complications. The nature of complications was mild in nature on the basis of clavin dindo classification.

DISCUSSION

This discussion emphasizes on observation and comparative study of Intralesional Triamcinolone and Topical silicon gel in management of keloids.

Sex wise distribution:-

In my study Out of total 60 patients 36 patients (60 %) were female and 24 (40%) were males, the prevalence of female were slightly more than males but were not significant (p value=0.12).

Age distribution:-

In this study 65% of patients belonged to the age group of 21-30 years followed by 20% patients in age group of 11-20 years. The age range was 11-42 years. More than 85% of patients were within the age of 30 years. In the study of Brain et al² and Murray³ the onset of keloid was seen most commonly between 10 and 30 years of age and uncommon at age extremes.

Occupation wise distribution :-

Among the occupational groups, the students constituted the maximum number of cases i.e 38.3 % followed by housewife 30.0%, farmers 18.3%, labourer 6.7%, others 6.7%. respectively. however the occupation in the prevalence of disease is not significant (p value >0.05).

The reason being common in students may be due to being younger age group and they are more prone for acne vulgaris and trauma.

DURATION OF KELOIDS :

In 65 % of patients the duration of disease was between 1 – 2 years followed by <1 years in 23% of patients and >2 years in 11.67 % of patients. Cosmon et al⁷ in their study observed that most (>60%) of the keloids occur within 1 year of local trauma and others as early as to 2-4 weeks. Muir⁸ found that in majority of patients the duration of keloid belonged to 3- 6 months. In this study the longer duration of lesions can be attributed to the negligence on the part of the patients. The difference in distribution of duration of lesions within the five regimens was non-significant (p>0.05).

SITE OF LESION :

In this study the most common site of keloid was chest (33.3%) followed by shoulder and neck (25%) and back (20%), arm (13.33%), ear lobules (8.33%). Face and soles were uncommon sites for keloid.

FAMILY HISTORY:

In the present study, 11.66 % patients had positive family history. Brain et al⁷, in their study reported familial incidence of 4.5% - 16% in black and Hispanic population. A family history of keloid is frequently elicited in the study of omo-dave⁷. In familial cases the exact mode of inheritance is unclear, with both autosomal recessive¹⁰ patterns of inheritance being reported.

PRESENTING SYMPTOMS AND SIGN:

Out of 60 patients all patients had complaints of hyperpigmentation of lesion i.e cosmesis (100%) followed by itching 15% and pain in 8.33%. In the study of Brain et al⁷ all the presenting symptoms/signs were pruritis, pain, cosmetic disfigurement, skin discolouration and restriction of movements.

RESPONSE OF PATIENTS TO RESPECTIVE REGIMENS:

In the present study, the primary outcome evaluated was the percentage of flattening as well regression in symptoms of keloid, as a main

parameter of efficacy.

Intralesional triamcinolone group:-

Out of 30 patients 10 (33.3%) patients showed excellent response followed by good response in 11 (36.7%) patients, fair response in 7 (23.3%) patients and poor in 2 (6.66%) patients. Relief of symptoms were seen in all patients.

Brain et al⁵ in his study found that use of intralesional triamcinolone acetone (10-40 mg/ml) injection, was associated with significant response rate in 40- 100% of cases.

SUMMARY AND CONCLUSION

One sixty patients were included in this study with each regimen constituted of 30 patients, thus there were equal number of patients in both the regimens.

- There was female preponderance. F:M=1.5:1
- More than 2/3rd (65%) patients belonged to the 3rd decade of the life.
- Students and housewives constituted to 38.3% and 30% of the total patients.
- More than half of the patients had keloid of 1-2 year duration.
- Chest was the commonest site (33.3%) followed by shoulder and neck (25%).
- Hyperpigmentation was the commonest presenting symptom seen in almost all patients followed by itching.
- Over all better outcome was seen in Intralesional triamcinolone group compared to Topical silicon gel in relieving the symptoms and decreasing size of lesion as well as preventing recurrences.
- Among both the study groups the response to the treatment was excellent in those patients who had keloids of < 1 years durations as these lesions will be smaller in size which makes therapy much convenient.
- There are no major complication of using Intralesional Triamcinolone and Topical silicon gel in treating keloid. Both are safe and effective of varying degree in treating the lesion.

The both modalities of treatment was more effective in treating smaller size and shorter duration of lesion than massive keloids. Thus keloids are more common in female, over the presternal region and mostly present in third decade of life. Both Intralesional Triamcinolone and Topical silicon gel are effective in treating keloid with minimal side effect. Relatively better responses were seen with using Intralesional Triamcinolone than silicon gel. But silicon gel had advantage that it can be used by patient itself and lesser frequency of hospital visits for administration.

Table: Overall response Group In intralesional triamcinolone and silicon gel groups

			Group		Total
			Trimcinolone	Silicone	
Overall response	Excellent	Count	10	4	14
		% within Group	33.33%	13.33%	23.33%
	Good	Count	11	6	17
		% within Group	36.7%	20.0%	28.33%
	fair	Count	7	12	19
		% within Group	23.3%	40%	31.66%
	poor	Count	2	8	10
		% within Group	6.66%	26.7%	16.66%
Total		Count	30	30	60
		% within Group	100%	100%	100%

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