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Original Research

Comparison of intralesional triamcinolone acetonide injection versus intralesional cryotherapy with intralesional triamcinolone acetonide in keloids

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ABSTRACT:
Background: Keloids are the outcome of improper wound healing caused by trauma or inflammation to the skin. Hence; the present study was undertaken for comparing the of therapeutic efficacy and safety of intralesional triamcinolone acetonide injection versus intralesional cryotherapy with intralesional triamcinolone acetonide in keloids. **Materials & methods:** 40 patients with keloid were enrolled and were randomly divided into 2 groups of 20 patients each by computerized random number generator.The data was collected using a predesigned structured proforma eliciting information regarding socio-demographic and other clinical variables: Group A: Intralesional triamcinolone acetonide group, and Group B: intralesional cryotherapy with intralesional triamcinolone acetonide group. Procedure was repeated at 4 weekly intervals. Post procedure, follow up was done. All the patients were evaluated for therapeutic outcome both photographically and by "Patient and Observer Scar Assessment Scale" (POSAS). **Results:** Percentage improvement among patients of group A and group B was 63.86 percent and 71.97 percent of the patients respectively. Significant better improvement was seen among patients of group A. Recurrence was significantly higher patients of group A (35 percent) in comparison to patients of group B (5 percent). **Conclusion:** Intralesional cryotherapy with intralesional triamcinolone acetonide showed better results in comparison tointralesional triamcinolone acetonide injection along among keloids patients.
Key words: Triamcinolone acetonide, Cryotherapy

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INTRODUCTION

Keloids are the outcome of improper wound healing caused by trauma or inflammation to the skin. The occurrence of keloids is estimated to range between 5% and 16% among darker-pigmented people of African, Asian, and Hispanic heritage.Keloids are the outcome of abnormal wound healing. The typical steps involved in the process of wound healing are (1) inflammatory, (2) fibroblastic, and (3) maturation. In keloids, the unregulated continuation of the fibroblastic phase results in the clinical and histological manifestations.[1, 2]

Complex genetic and environmental factors contribute to the aetiology of keloids. Keloids form when there is an abnormal accumulation of dermal fibrosis during the wound healing process.Keloids are characterised histologically by an abundance of disordered dermal collagen and vasculature, as well as a significant inflammatory-cell infiltration and hyperactive mesenchymal cells.[3, 4]

Keloids grow between one and three months following an injury. Keloids may form up to a year or more after a wound, or they may develop spontaneously or the injury was so minor that the patient cannot recollect it. It's more likely, though, that the injury wasn't recorded because it was minor or that the keloid didn't appear for months or even years after the initial injury.[5]

Injections of TAC intralesionally have been found to lower scar volume and height, improve scar pliability,

lessen scar discomfort and itching, and prevent scar recurrence. Anti-inflammatory and anti-mitotic activities are present in TAC. Cryotherapy is a low-temperature therapy that induces vascular injury and necrosis of tissue. It has been used as a monotherapy or in combination with other treatments, such as intralesional steroid injections, to treat keloids.[6- 8] Hence; under the light of above-mentioned data, the present study was undertaken for comparing the of therapeutic efficacy and safety of intralesional triamcinolone acetonide injection versus intralesional cryotherapy with intralesional triamcinolone acetonide in keloids.

MATERIALS & METHODS

The present study was done for comparing the of therapeutic efficacy and safety of intralesional triamcinolone acetonide injection versus intralesional cryotherapy with intralesional triamcinolone acetonide in keloids. 40 patients with keloid were enrolled and were randomly divided into 2 groups of 20 patients each by computerized random number generator.The data was collected using a predesigned structured proforma eliciting information regarding socio-demographic and other clinical variables: Group A: Intralesional triamcinolone acetonide group, and Group B: intralesional cryotherapy with intralesional triamcinolone acetonide group. Procedure was repeated at 4 weekly intervals. Post procedure, follow up was done. All the patients were evaluated for therapeutic outcome both photographically and by "Patient and Observer Scar Assessment Scale" (POSAS).All the results were analysed using SPSS software. Mean and SD was calculated. Chi-square test and student t test were used for evaluation of level of significance.

RESULTS

Mean age of the patients of group A and group B was 41.3 years and 40.9 years respectively. 65 percent of the patients of group A and 55 percent of the patients of group B were males while the remaining were females. Percentage improvement among patients of group A and group B was 63.86 percent and 71.97 percent of the patients respectively. Significant better improvement was seen among patients of group A. Recurrence was significantly higher patients of group A (35 percent) in comparison to patients of group B (5 percent).

Table 1: Age-wise distribution of patients

Age (years)	Group A	Group B
Mean	41.3	40.9
SD	5.6	6.7
p-value	0.880	

Table 2: Gender-wise distribution

Gender	Group A		Group B	
	Number of patients	Percentage	Number of patients	Percentage
Males	13	65	11	55
Females	7	35	9	45
Total	20	100	20	100
p- value	0.913			

Table 3: Mean POSAS score at different follow-up time intervals

Time intervals	Group A	Group B	p-value
Baseline	74.98	76.28	0.142
4 Weeks	66.80	60.46	0.135
8 Weeks	59.48	49.80	0.003*
16 Weeks	41.50	33.23	0.000*
30 Weeks	27.10	21.38	0.002*
Percentage reduction	63.86	71.97	0.001*

*: Significant

Table 4: Recurrence

Recurrence	Group A		Group B	
	Number of patients	Percentage	Number of patients	Percentage
Present	7	35	1	5
Absent	13	65	19	95
Total	20	100	20	100
p- value	0.00 (Significant)			

DISCUSSION

Keloids are pathological scars that grow over time and extend beyond the initial site of injury after impaired wound healing. These scars frequently recur and rarely regress. They are aesthetically disfiguring, can cause pain, itching, discomfort as well as psychological stress, often affecting quality of life. The incidence of keloids is highest among darker-pigmented persons of African, Asian and Hispanic descent and is estimated to be in the range of 5%–16%. Males and females have an equal risk of developing keloids. Persons aged 10–30 years are also at a higher risk of developing keloids. Additional risk factors include having blood type A, hyper-IgE and hormonal peaks during pregnancy or puberty.Many treatment modalities, including surgical and non-surgical, have been explored and have been reported to be beneficial; however, none have been absolutely satisfactory or optimal for the treatment of all keloid subtypes to date. This poses a major challenge to clinicians. Often, a combinational therapeutic approach appears to offer the best results with higher patient satisfaction compared to monotherapy. The aetiopathogenesis of keloids is not fully elucidated; however, with recent advances in molecular biology and genetics, insight is being gained on the complex process of scar formation and hence new therapeutic and management options for keloids.[9- 11]

Mean age of the patients of group A and group B was 41.3 years and 40.9 years respectively. 65 percent of the patients of group A and 55 percent of the patients of group B were males while the remaining were females. Percentage improvement among patients of group A and group B was 63.86 percent and 71.97 percent of the patients respectively. Significant better improvement was seen among patients of group A. Recurrence was significantly higher patients of group A (35 percent) in comparison to patients of group B (5 percent).Limmer EE and Glass DA reviewed details current treatment of keloids with injections (bleomycin, verapamil, hyaluronic acid and hyaluronidase, botulinum toxin, and collagenase), cryotherapy, laser, radiofrequency ablation, radiation, extracorporeal shockwave therapy, pentoxifylline, and dupilumab. Commonly affecting those with skin of color, keloids are an aberrant wound response that leads to wound tissue expanding above and beyond the original cutaneous injury. Keloids are notoriously and particularly difficult to treat because of their tendency to recur after excision. The current standard of care is intralesional steroid (triamcinolone acetonide). [12]Patel VI et al 2020 analysed the response of intralesional 5-FU alone with that of intralesional triamcinolone acetonide with surgical excision thus to provide the best possible treatment modality to patients. Sixteen patients having keloid in head and neck region were taken into the study and divided into two groups after a routine blood check-up. Group A intralesional 5-FU once in three weeks for six sessions. Group B surgical excision followed by intralesional triamcinalone acetonide once weekly for six sessions. Patients were followed up for one year. In group A, 7 patients came for review regularly. Aesthetic improvement was excellent for 6 but was considerably painful for all. In group B, 8 patients came for regular review, 6 had minimal scarring and all patients complained of mild pain post operatively. Intralesional 5-FU can be a very effective treatment modality for keloids, with no recurrence noted, except for its poor tolerability owing to side effects such as pain, nausea and vomiting. Classical method of surgical excision followed by intralesional steroids is better tolerated but has higher recurrence rates.[13]

CONCLUSION

Intralesional cryotherapy with intralesional triamcinolone acetonide showed better results in comparison tointralesional triamcinolone acetonide injection along among keloids patients.

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