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# Intralesional Triamcinolone Injection As A Treatment Modality For Keloid And Hypertrophic Scar

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Abstract: Keloids and hypertrophic scars occur when there is excessive proliferation of fibrous tissue during the healing process of a skin injury. Keloids extend beyond the borders of the original wound, typically do not regress naturally and have a tendency to reappear after removal. On the other hand, hypertrophic scars do not exceed the limits of the initial damage and may partially resolve on their own.[1]

Intralesional corticosteroids are commonly utilised for the treatment which largely work by suppressing the inflammatory process in the wound. They also reduce collagen and glycosaminoglycan synthesis and restrict the proliferation of fibroblasts. Typically, two or three injections of triamcinolone acetonide [10-40 mg/ml] are adequate, although in some cases, injections may need to be administered for a duration of six months or longer.[2]

**Index Terms -** Component, formatting, style, styling, insert.

## I. INTRODUCTION

**Hypertrophic scars**: Hypertrophic scars are raised, red, rigid growths precipitated due to underlying dermal injuries such as burn, surgery and trauma, during which there is aberrant wound healing with excessive pathological deposition of the extracellular matrix than degradation.[3]

**Keloid**: Keloids are fibrous structures that appear as tender growths, variably pruritic near the site of injury. The most common site being anterior chest wall, upper back, shoulders and ear lobes. The accumulated fibrous tissue is associated with increased metabolic activity and cellularity of fibroblasts.[3]

Keloids may range in size from papules of a few millimeter in diameter to football size or larger tumors. The

consistency of keloids varies from doughy and soft to rubbery hard. They rarely penetrate into the subcutaneous tissue beneath the skin, although they do protrude above the level of the surrounding skin. While those on the central chest and extremities are typically elevated and have a flat surface, with the base frequently being wider than the top, those on the ear, neck, and belly are typically pedunculated. Some have claw-like shapes with uneven borders, although the majority are round, oval, or have normal margins .The most frequently affected areas appear to be the earlobes, presternal, upper back and deltoid.[4-7]

**Intralesional steroids**: Intralesional corticosteroid injection is a highly prevalent method employed for the management of keloids. The recommended corticosteroid is Triamcinolone acetonide. The concentration of the substance ranges from 10 to 40 mg/ml, which varies based on the size, thickness and location of the lesion.

Triamcinolone, an intralesional steroid, is the most often utilized treatment for keloids.

The administration of Triamcinolone acetonide at a concentration of 40 mg/ml can be done either on its own or in conjunction with lignocaine 1%. This is achieved using insulin syringe. The needle is inserted into the lesion at an inclination of 30 to 45 degrees, with the bevel of the needle facing downwards. The administration of the injection must be done only after the process of withdrawal of fluid from the syringe to ensure proper placement. The injection approach involves sequentially administering 0.05 to 0.1ml of the substance at each spot via several punctures, resulting in blanching. Preventing the spread of blanching to the surrounding tissue is imperative. Hemostasis is established by applying pressure and a bandage with antibiotic ointment is applied. Injection is administered at regular intervals of 3 to 4 weeks.[8-9]

## Materials and Methods

### Source of Data:

All the subjects above the age of 18 years with keloid and hypertrophic scar attending the OPD of department of dermatology, MVJ Medical College and Research Hospital.

### Methods of Collection of Data:

- **Study design:** Interventional Cross- sectional hospital based study
- **Study period:** July 2022 – June 2024
- **Place of study:** MVJ Medical College and Research Hospital
- **Sample size:** 30

## Results

### 1. Distribution of lesion of the study group:

| Lesion | Study Group (N=30) |
|---|---|
| Hypertrophic scar | 14 (46.7) |
| Keloid | 16 (53.3) |
| Total | 30(100.0) |

In this study group, 14 (46.7%) had hypertrophic scars and 16 (53.3%) had keloids.

### 2. Response in Group:

| Response | Study Group | Percentage |
|---|---|---|
| Poor (<25%) | 2 | 6.7 |
| Fair (25 – 50%) | 5 | 16.7 |
| Good (50–75%) | 10 | 33.3 |
| Excellent (>75%) | 13 | 43.3 |
| Total | 30 | 100.0 |

The table shows that in this Group, 43.3% of participants rated their response as excellent, 33.3% as good, 16.7% as fair and 6.7% as poor.

### 3. Response based on the lesion

| Response | Lesion | Poor (<25%) | Fair (25–50%) | Good (50–75%) | Excellent (>75%) |
|---|---|---|---|---|---|
| Study Group | Hypertrophic scar | 0(0.0) | 3(21.4) | 5(35.7) | 6(42.9) |
| | Keloid | 2(12.5) | 2(12.5) | 5(31.3) | 7(43.8) |

In this study group, excellent responses to hypertrophic scars was observed in 42.9% and in keloids it was 43.8%.

**4: Side effects of treatment regimen for the study group**

| Side effects of Treatment regimen | 1st visit | 2nd visit | 4th visit | 8thvisit |
|---|---|---|---|---|
| Pain | 24 | 20 | 17 | 14 |
| Local hypoesthesia | 20 | 10 | 2 | 4 |
| Edema | 18 | 11 | 3 | 1 |
| Secondary infection | 0 | 0 | 1 | 1 |
| Telangiectasia | 0 | 1 | 1 | 1 |
| Hypopigmentation | 1 | 4 | 9 | 9 |
| Atrophy | 0 | 1 | 1 | 1 |

The table shows a decrease in pain, local hypoesthesia and edema over time, with low occurrences of secondary infection, telangiectasia, and atrophy. Hypopigmentation increased progressively, from 1 case at the 1st visit to 9 cases at the 8th visit.

**Discussion**

The mean age of the study population was 30.57 ± 11.34 years in group

In the current study the mean age of males and females were almost equally distributed. The most common age group for prevalence of keloids and hypertrophic scars was found to be between the 21 years to 40 years and the observation in our study concurred with this finding. In the study conducted by Yosipovitch et al., the mean age was found to be 25.9 ± 9.9 years[10]. In the study conducted by Layton et al., the mean age was 20 years in case of males and 28 in case of females[11]. In the study conducted by Zouboulis et al., the median age was 26 years for patients with Keloids as well as those with hypertrophic scars[12].

In our study the main site of lesion for both hypertrophic scar and keloid was chest followed by back and shoulder. In the study conducted by Zouboulis et al., the main site of lesion was similar to our study with 31.2% having lesion on the chest and 21.6% having the lesion on the shoulder and upper arms [12].

All the patients were followed till 8th sitting or until the resolution of lesion which ever was earlier. Most of the patients showed improvement after 4th sitting and main side effects observed in the group was pain (80.0), local hypoesthesia (66.6), edema (60.0) and hypopigmentation (3.3) during the first visit. During the 8th visit, pain (46.6%), local hypoesthesia (13.3) and edema (3.3%) decreased in frequency. Hypo pigmentation was found to be increasing in number in subsequent visits (3.3% to 30.0%) which is considered to be common in the steroid therapy.

In the study conducted by Yosipovitch et al. no significant side effects were observed with intralesional steroids. [10] In the study conducted by Kocet al., also no significant side effects were observed in patients who received intralesional triamcinolone alone.[13] In study conducted by Aggarwal et al., skin atrophy was found to be a significant side effect of the steroid.[14] Telangiectasia was found to be a side effect of injectable in the study conducted by Khalid et al.[15]

This difference in scores at 4th and 8th weeks were statistically significant. But the scores were almost similar during the initial two visits of the treatment.

**Conclusion**

Hypertrophic scar and keloid were commonly seen in age group 21 to 40 yrs. No sexual predilection was noted. Most common sites were chest and back. Intralesional steroid injections with triamcinolone acetonide gave good results in 3-4 sittings with reduction in size of the lesions. There were no serious adverse effects observed except for pain and hypopigmentation, being the most common side effect. Intralesional steroids is relatively cheaper compared to other modalities and can be readily used in resource poor setting.

**REFERENCES**


1. Griffiths CE, Barker J, Bleiker TO, Chalmers R, Creamer D, editors. Acquired disorder of dermal connective tissue. In: Rook's textbook of dermatology. 4th ed. John Wiley & Sons; 2016. p. 96.45-96.49.

2. Gauglitz GG, Korting HC, Tatiana P, Thomas R, Jeschke MG. Hypertrophic Scarring and Keloids: Patho mechanisms and Current and Emerging Treatment Strategies. Mol Med. 2011;17:113-125

3.Tripathi S, Soni K, Agrawal P et al. Hypertrophic scars and keloids : a review and current treatment modalities. Biomed Dermatol. 2020;11: 1-10.

4.Rockwell WB, Cohen IK, Ehrlich HP. Keloids and hypertrophic scars. A comprehensive review. Plast Reconstr Surg 1989; 84:827–37.

5.Lanza JT, Lucente FE, Har-el G. Keloid. Oto laryngol Head Neck Surg 1992;106:741–2.

6.Hendricks WM. Complications of ear piercing. Treatment and prevention. Cutis 1991;48: 386–93.

7.Kelly AP. Keloids. Dermatol Clin 1988;6: 413–24.

8. Asboe –Hansen G. Hormonal effects on connective tissue. Am J Med. 1959; 26:470.

9. Al-Attar A, Mess S, Thomassen J M, Kauffman CL, Davison SP. Keloid pathogenesis and treatment. Plast Reconstr Surg. 2006;117: 286-300

10. Yosipovitch G, Widijanti Sugeng M, Goon A, Chan YH, Goh CL. A comparison of the combined effect of cryotherapy and corticosteroid injections versus corticosteroids and cryotherapy alone on keloids: a controlled study. J Dermatol Treat. 2001;12:87-90.

11. Layton A, Yip J, Cunliffe W. A comparison of intralesional triamcinolone and cryosurgery in the treatment of acne keloids. Br J Dermatol. 1994;130:498–501.

12. Zouboulis CC, Blume U, Buttner P, Orfanos CE. Outcomes of Cryosurgery in Keloids and

Hypertrophic Scars A Prospective Consecutive Trial of Case Series. Arch Dermatol [Internet]. 1993;129:1146–51.

13. Koc E, Arca E, Surucu B, Kurumlu Z. An open, randomized, controlled, comparative study of the combined effect of intralesional triamcinolone acetonide and onion extract gel and intralesional triamcinolone acetonide alone in the treatment of hypertrophic scars and keloids. Dermatologic Surgery. 2008 Nov;34(11):1507–14.
14. Aggarwal A, Ravi kumar BC, Vinay KN, Raghu kumar S, Yashovardhana DP. A comparative study of various modalities in the treatment of keloids. Int J Dermatol. 2018 Oct 11;57(10):1192–200.
15. Khalid FA, Mehrose MY, Saleem M, Yousaf MA, Mujahid AM, Rehman SU, et al. Comparison of efficacy and safety of intralesional triamcinolone and combination of triamcinolone with 5-fluorouracil in the treatment of keloids and hypertrophic scars: Randomised control trial. Burns. 2019;45(1):69–75