

## 5- Fluorouracil Versus Triamcinolone Injection in the Management of Periocular Scars

Research Article

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### Abstract

**Purpose:** The purpose of our study was to compare the effects of intralesional 5 Fluorouracil versus Triamcinolone injection for the modulation of periocular scar formation and wound contracture.

**Methods:** Prospective interventional study was done on patients attending outpatient department of ophthalmology diagnosed to have unfavourable post traumatic or post surgical periocular scars who received intralesional 5FU/Triamcinolone injection.

**Results:** 20 cases were reviewed. Significant improvement in appearance and release of wound contracture was seen in both the groups.

**Conclusion:** Intralesional 5FU/Triamcinolone injection is an effective non surgical tool in the management of periocular wound modulation.

**Key words:** Periocular Scars; 5 Fluorouracil; Triamcinolone; Wound Modulation.

### Introduction

Visible scars are formed due to an exaggerated healing process and are considered abnormal when the amount of fibrosis is excessive resulting in a hypertrophic, keloidal or atrophic scar. Fibroblasts proliferate at the site of the injury, leading to the over production of collagen, followed by cross-linking and the loss of unidirectional alignment, giving the scar its ridge like character which are cosmetically disfiguring. These scars can be aesthetically disfiguring and functionally debilitating [1]. The periocular skin is a thin, highly vascular structure which allows optimal healing and less prominent scars than elsewhere in the body [2]. Scar formation is a highly regulated tissue response following skin or tissue injury and is anticipated after surgical manipulation [3].

5FU is a pyrimidine analogue, most commonly used antimetabolite in ophthalmic practise. 5FU has anti scarring property hence used in ocular & adnexal surgeries in whom natural healing process could result in unfavourable surgical outcome. Fluorouracil (5FU) act by inhibiting cell proliferation through the disruption of DNA synthesis and inhibiting collagen production. Intralesional

5FU is an effective treatment in the management of dermal scars. Corticosteroids suppress inflammation and mitosis while increasing vasoconstriction in the scar. Triamcinolone acetone suspension 10 to 40 mg per ml (depending on the site) is injected intralesionally, which, although painful, will eventually flatten keloid.

### Materials and Methods

#### Source of Data Collection

Study was conducted in a tertiary care hospital on patients diagnosed to have periocular scars attending the outpatient and inpatient department of ophthalmology.

#### Method of Data Collection

**Sample Size:** The number of cases which will meet the inclusion criteria during study period.

**Study Type:** Prospective Interventional Study.

**Study Period:** 2014 - 2015

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## Inclusion Criteria

All patients with post traumatic periocular scars, post surgical keloid, hypertrophic DCR/DCT scar, cicatricial ectropion, eyelid post tumour excision scar, skin graft keloid periocular scars.

## Exclusion Criteria

1. Patients with drug allergy.
2. Prior treatment for scar prevention.

## Method of Study

After obtaining a written informed consent patients will be randomised into two groups of 20 each. Each group will be used 5- Fluorouracil and Triamcinolone injection. Preoperative evaluation will be done along with a critical assessment of the scar (location, extent skin type, prior treatments). An intradermal injection of approximately 0.2-0.4 ml will be given into the scar at an interval of 6 weeks. The injection will be repeated 2-3 times for a total of up to 4 injections. At each visit, patients will be evaluated for redness, swelling, wound healing, scar formation, tissue inflammation/atrophy, telangiectasis, and pigmentary disturbances.

## Statistical Methods

The study was analysed by Descriptive statistics and Independent *t* tests.

## Results

Twenty cases of periocular scar formation were reviewed. There were 11 female and 9 male patients. 4 patients had lower eyelid cicatricial ectropion, 9 patients had a hypertrophic DCR scar, 1 had a post surgical keloid and 6 patients had post traumatic periocular scars. Patients were divided into two groups of 10 patients each. Group A received 0.2-0.5ml (50mg/ml) of 5 FU and group B received 0.2-0.5ml (40mg/ml) of triamcinolone injection. An intradermal injection of approximately 0.2-0.4 ml will be given into the scar at an interval of 6 weeks. The injection will be repeated 2-3 times for a total of up to 4 injections.

Softening of the scars, significant improvement in appearance and release of wound contracture was seen in all patients after the injection. There were no cases of any hypopigmentation, fat atrophy or white precipitates at the site of injection, side effects

or complications. There was no significant statistical difference in between those two groups studied.

## Discussion

The common scars seen in the periocular area are hypertrophic scars, keloids and contracture scars. Race, age, sex, genetics, infection and type of injury influence the type of scar formation. Hypertrophic scars remain confined to the border of the original wound, whereas keloids extend beyond the margins of the original wound. Keloids continue to grow over time and do not regress spontaneously. Contracture scars impair the ability to move due to the tightening of skin.

Various therapeutic modalities are present for the prevention and formation of scars. The modulation of scar formation in the postoperative setting is a vital component of aesthetic eyelid and facial surgery. There are various surgical modalities to revise scars, however non surgical treatment which target the underlying biological are safe and effective. These include anti inflammatory, antimetabolites agents and tissue volume expanders.

In a study conducted by Mehryar Tyaban, Raymond Douglas found 5- FU as a versatile antimetabolite in efficacy and excellent safety profile in management of periocular scars. In a study conducted by Annie Stuart, Malena M. Amato, Sean M. Blaydon provided track record in effective management of periocular scar and keloid, small and chronic chalazia with 5- FU. In a study done by Savari Desai found the use of intralesional 5- FU for modulation of periocular scar formation and wound contracture. In a study done by Nitin Trivedi, Ravindra Vhankade found use of triamcinolone for prevention & treatment of hypertrophic scars & keloid.

## Conclusion

Intralesional 5FU/Triamcinolone injection is an effective non surgical tool in the management of periocular wound modulation with no complications.

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