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A Study of Short Term Rise in Intra Ocular Pressure Following Peri Bulbar Injection of Triamcinolone Acetate

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Abstract: ***Aims and objectives: To study short term side effects of peribulbar injection of traiamcilone acetate including rise in intra ocular pressure. Materials and methods: 50 eyes were studied for rise in intra ocular pressure after administration of peri bulbar injection of traimcilone acetate. Iop by goldman applanation tonometry with corrected pachymetry was taken on the day of administration and 3 days after the administration. A rise in > 6 mmHg than the previous study was considered significant. Results were compared with standard paired T test. Observations: Out of 50 patients, 30 had bilateral eye disease. Highest number of injections were given for age related macular degeneration. Max rise of iop was seen as 18 mm Hg. Significant iop rise of iop was seen in 4 patients. Results: There is no significant short term rise of iop following peribulbar injection of triamcinolone***

Keywords: triamcinilone, steroid induced ocular hyprtension

1. Introduction

Peribulbar injections of intermediate or long-acting corticosteroids are widely used as the initial treatment for visual loss caused by retinal edema or other reversible effects of inflammation in patients with intermediate uveitis.[1] A subtenon injection delivers a large amount of the drug to the posterior segment of the eye via transscleral absorption, and it also minimizes the risk of systemic side effects.

Because both topical and systemic corticosteroids are known to be associated with an increase in intraocular pressure (IOP), this extended intraocular presence of TA may lead not only to secondary ocular hypertension but also to steroid-induced secondary open-angle glaucoma necessitating trabeculectomy.

In comparison with other corticosteroids, triamcinolone acetonide (TA) is a minimally water-soluble steroid in a suspension form; as a result, it can maintain a long-term intraocular concentration for an expanded period of time.

Indications for peribulbar route of administration of triamcinolone are

- Diabetic macular edema
- Branch retinal vein occlusion
- Central retinal vein occlusion
- Exudative age-related macular degeneration
- Myopic choroidal neovascularization
- Uveitis

2. Review of Literature

Intraocular neovascular diseases such as exudative AMD and proliferative diabetic retinopathy are one of the leading causes of acquired vision loss. In addition, edematous diseases of the retina such as diffuse diabetic macular edema and persistent cystoid macular edema also significantly contribute to the incidence of acquired vision loss. Steroids can be used for these diseases because they reduce vascular leakage and inhibit intraocular cell proliferations. Both systemic and local administration methods of the steroids have been used to deliver the drug, but systemic administration has limitations because of its various systemic side effects and poor penetration into the eye. The local administration of steroids such as subtenon or intravitreal injections reduces these limitations and maintains effective intraocular concentrations.

Using indirect ophthalmoscopy and scleral depression, Sophie et al. noted the presence of TA crystals in the vitreous for at least 12 weeks. In contrast, Scholes et al. reported a marked change in the appearance of what was thought to be TA, and they were unable to quantify the steroid using indirect ophthalmoscopy.

Beer et al. determined that measurable concentrations of TA would be expected to last for approximately three months (93±28 days) in the non-vitrectomized eyes. Although the intraocular concentration of TA may fall below the therapeutic range in different clinical settings well before 90 days have passed, the persistence of even a trace amount may be related to the prolonged ocular hypertension occasionally seen in patients. It was also reported that the elevated IOP levels associated with IVTA that were not controlled with maximal anti-glaucoma medication could effectively be treated through a vitrectomy-assisted removal of the TA.

3. Materials and methods

50 eyes were studied for rise in intra ocular pressure after administration of peri bulbar injection of traimcilone acetate

Iop by goldman applanation tonometry with corrected pachymetry was taken on the day of administration and 3 days after the administration.

A rise in > 6 mmHg than the previous study was considered significant.

Results were compared with standard paired T test.

4. Observation

50 patients were enrolled in the study.

The mean age of patients receiving peribulbar triamcinolone was found to be 53.5

30 were males and 20 were females

The most common indication for receiving prei bulbar injection of triamcinolone among patients enrolled in the study was found to be for diabetic retinopathy changes. (32%)

The greatest rise in iop found was a difference of pre and post injection of 10 mmHg

A rise of > 6 mmHg was found in 5(10%) eyes.

5. Results and Conclusion

There is no significant short term rise in iop following peribulbar injection of triamcinolone acetate

6. Limitations of study

- Small sample size
- Long term follow up not available

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