

## Steroid Induced Ocular Defects – Case Report

Remya Reghu\*, Sai Keerthana P. C., Krishnapriya Raj, Meenu Vijayan, Roshni P. R.

Department of Pharmacy Practice, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham University, AIMS Health Sciences Campus, Kochi – 682041, India.

### ABSTRACT

Prednisolone (Wysolone), a corticosteroid drug with glucocorticoid and mineralo-corticoid activity. The drug is mainly used for the treatment of inflammatory and auto-immune conditions. The drug will produce some side effects like visual, auditory defects, fluid retention of face etc. It is a case of a lady of 38 year old presented with multiple conditions after started Prednisolone 60mg OD for rheumatoid arthritis. Now she is admitted in the emergency department of our hospital with signs and symptoms of seizures. Her past medication history includes leviterecetam 500mg BD for seizures and Prednisolone 60mg OD for rheumatoid arthritis. Thereafter she progressively complained about loss of vision. Her vitals were stable. Ophthalmology consultation was given to the patient who revealed steroid induced cataract for which she was started with Carboxyl methyl cellulose sodium eye drops (Refresh tear drops). The patient experienced a partial recovery after having treated for 10 days and was discharged. We all know that steroids will be able to produce side effects; some of them were serious ones. So Clinicians and Ophthalmologists should be aware of the ocular side effects of steroids. This case report highlights the occurrence of adverse outcomes with Prednisolone therapy thus giving an insight to proper use of steroids.

**Keywords:** Adverse effects, glaucoma, ophthalmology, prednisolone, steroid

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### \*Address for correspondence:

**Remya Reghu,**

Department of Pharmacy Practice, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham University, AIMS Health Sciences Campus, Kochi – 682041, India.

E-mail: remyareghu@aims.amrita.edu

### INTRODUCTION

Prednisolone, which is a steroid, actually prevents the release of inflammatory substances in the body. The mechanism of action is that prednisolone irreversibly binds with alpha and beta glucocorticoid receptors [1]. Depending on the involved tissues, Alpha and Beta receptors are seen in all tissues with variable numbers [2,3]. Most cells biochemical behavior can activate and influenced by Prednisolone [4]. Steroids modifies gene transcription by interacting with cellular DNA and steroid/receptor complexes and then bind to steroid-response elements. They will induce and inhibits the synthesis of some proteins.

### CASE PRESENTATION

It is the case of a lady of 38 year old. She is a known case of rheumatoid arthritis and was brought to the Emergency department of our hospital with seizures

signs. She was previously hospitalized at the department of Rheumatology for leg stiffness. During the stay in Emergency department she complained about loss of vision so she was referred to Ophthalmology department. She was on Prednisolone 60mg OD for arthritis. On examination her eye revealed stromal edema and was diagnosed to have steroid induced cataracts and was stabilized with Carboxyl methyl cellulose sodium eye drops. The patient had history of Hypertension and Epilepsy [5-7]. Her family history was clear and she is a non smoker and non-alcoholic. Furthermore she had no history of allergy or hypersensitivity to any other drugs or foods.

On physical examination she was found to be conscious, oriented, cool, calm, and drowsy. Heart rate was: 147/mt, Respiratory rate R: 24/mt, Blood Pressure:

118/72 mmHg and S PO<sub>2</sub>:99 %. Her routine laboratory Investigations were as follows:

**Table 1: Laboratory Investigation**

Parameter	Observed value
Hemoglobin	11.5mg/dl
Sodium	127mEq/l
Potassium	2.6mEq/l
Calcium	6.8mg/dl
Random Blood Sugar	77mg/dl
Blood Urea Nitrogen	37mg/dl
CRP	156.4
ESR	42

### Medications received during hospital stay

The patient received prednisolone 60mg OD for rheumatoid arthritis and leviteracetam 500 mg BD for seizures. As the blood tests revealed hypokalemia she was started with Syp. Kcl. Eye drops carboxy methyl cellulose sodium was prescribed for cataract. The patient experienced a partial recovery after having treated for 10 days and was discharged.

### DISCUSSION

Prednisolone is a synthetic glucocorticoid with weak mineralocorticoid properties. Its therapeutic effects results from inhibition of macrophage accumulation, suppression of capillary wall permeability, and collagen deposition the drug is readily absorbed from gastrointestinal tract [6]. The drug is used for the treatment of wide range of diseases involving inflammation. The side effect depends on dosage and duration of therapy. More commonly seen is a visual side effect. Those are cataracts, exophthalmus, eyelid edema, glaucoma, increased intraocular pressure [8]. There have also been a few reports of serious adverse reaction however. As per the researchers the rise in intraocular pressure complicated the use of corticosteroids. A similar case report of prednisolone induced glaucoma was reported in 2005 May also. Recently isolation of myocilin gene brought about interest in steroid-responsive phenomenon. Becker and Mills in their study in 1963 demonstrated that glaucoma patients had marked rise in Intra ocular pressure after exposure to topical corticosteroids [6].

### CONCLUSION

Patients should be counseled with adequate information regarding the side effects of prednisolone and advised to report and consult physician/pharmacists if any symptoms persist. Clinicians and Ophthalmologists should be aware of the ocular defects in such patients.

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