Case Report

Bisphosphonate Induced Recurrent Anterior Uveitis

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Abstract

A 68 year old female patient presented to ophthalmology OPD with recurrent episodes of anterior uveitis in both eyes since 2 years. Routine uveitis work-up was found to be within normal limits except elevated ESR and CRP levels. The patient had been taking oral alendronate 150 mg every two weeks for the past two years, which correlated with the duration and onset of uveitis. Uveitis improved drastically on stoppage of the drug with no further evidence of uveitis for past 6 months in both eyes. Patient is currently on follow up.

Key Words: Anterior Uveitis, Hyphema, Bisphosphonates

Introduction

Bisphosphonates are used to inhibit bone reabsorption in post-menopausal women and to manage hypercalcaemia associated with osteolytic bone lesions[1]. It can cause both systemic and ocular inflammatory response. Ocular side effects range from conjunctivitis, episcleritis, scleritis, uveitis and rarely retrobulbar optic neuritis[2]. No case of unilateral or bilateral scleritis resolved until bisphosphonates therapy was discontinued. The mechanism is unclear. Proinflammatory cytokines such as TNF-alpha and IL-6 may play a role in pathogenesis of ocular inflammation[3]. Here we present a rare case of bisphosphonate induced recurrent anterior uveitis.

Case History

A 68 year old female presented to Ophthalmology OPD, Chettinad Hospital and Research Institute with chief complaints of defective vision, pain and redness in right eye since one day. History of similar complaints in the past were noted in both the eyes for past two years intermittently. The patient was a known diabetic since 2 years on regular follow up and treatment. The patient was on oral alendronate (150 mg every two weeks) since 2 years for postmenopausal osteoporosis.

On examination, anterior segment of right eye showed lid oedema, conjuctival congestion with circumcorneal congestion, flare and cells (3+), hyphema in the anterior chamber (Fig 1 & Fig 2). Visual acuity of right eye decreased to 6/12 with glasses. B scan of right eye was done which was in normal limits. Anterior segment of both eyes showed signs of previous attacks of anterior uveitis with pigment dispersion at the back of cornea and atrophic iris. Blood investigations were in normal limits except elevation of C reactive protein and ESR levels. Blood sugars were under control (HbA1c-5.2). A presumptive diagnosis of Bisphosphonates induced uveitis was made. The patient was advised to stop the drug immediately. The patient was started on topical cycloplegics and topical steroids .The patient vision improved to 6/9 within one week and hyphema resolved completely. Steroids were gradually tapered and no further attacks of uveitis were noted in a 6 month follow up.

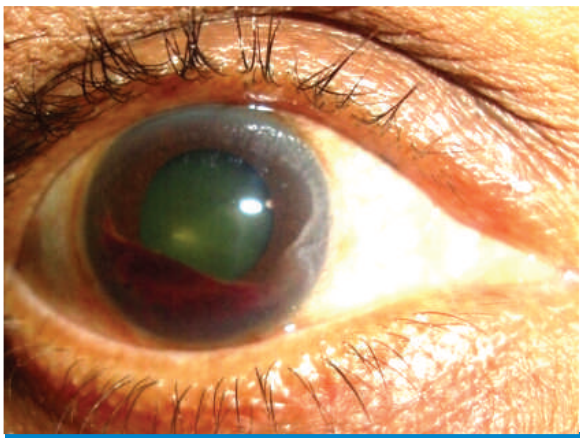

Fig 1: Showing Circumcorneal Congestion and Hyphema in the Right Eye

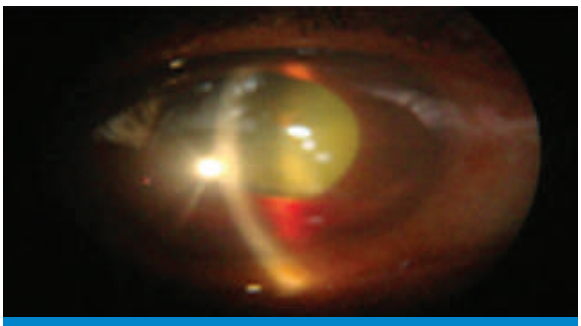

Fig 2: Showing Turbid Aqueous and Hyphema in Anterior Chamber of Right Eye

Discussion

Bisphosphonates are used in osteoporosis to prevent bone resorption. Hypercalcaemia resulting from metastatic disease of bone, Paget's disease[4], osteolytic cancers are treated with bisphosphonates. Bisphosphonates (nitrogen and non-nitrogen-containing) are known to cause ocular inflammation when given orally or intravenously, though intravenous use tend to cause earlier ocular inflammation. Ocular inflammation caused by pamidronate disodium5 has been reported more frequently than other bisphosphonates[6,7]. Bisphosphonates activates specific T-cell groups which reduce bone resorption[8]. Cytokine activation induces immunological reaction resulting in ocular inflammation[5]. Discontinuation of Bisphosphonates and administration of steroid resulted in resolution of inflammation in many patients[8]. Our patient was on oral alendronate (150 mg every 2 weeks) for the past two years during which she had recurrent episodes of non-granulomatous uveitis in both eyes. Her latest episode of uveitis resulted in hyphema and caused her defective vision. After the stoppage of alendronate, patient had no recurrence of uveitis in both eyes in 6 months follow up.

Conclusion

Ocular side effects of bisphosphonates though rare must be made to known to physicians and ophthalmologists and early diagnosis must be initiated for stoppage of the drug (Table 1). Less than 2% of patients develop systemic side effects which includes ocular inflammation, electrolyte imbalance, renal failure, nephrotic syndrome, maxillary and mandibular bone necrosis[4]. For patients who develop ocular symptoms, prompt ophthalmologic evaluation is crucial to determine the safety of a subsequent bisphosphonate therapy[4]. Increased C - reactive protein, ESR levels and leucopenia may be a non-specific indicator of Bisphosphonates induced uveitis as in our case. Patients who receive long-term bisphosphonate therapy should be evaluated at regular intervals for early signs of ocular inflammation, electrolyte imbalances and for hypocalcaemia[2].

BISPHOSPHONATES	ADVERSE EFFECTS[9]
PAMIDRONATE DISODIUM	Nonspecific conjunctivitis Uveitis Abnormal or blurred vision Scleritis Ocular pain Photophobia Episcleritis
ALENDRONATE SODIUM	Abnormal or blurred vision Ocular pain Non-specific conjunctivitis Uveitis Scleritis
ETIDRONATE DISODIUM	Abnormal or blurred vision Non-specific conjunctivitis
RISENDRONATE SODIUM	Non-specific conjunctivitis Abnormal or Blurred vision Scleritis
SODIUM CLODRONATE	Abnormal or blurred vision Photophobia

Table 1: Ocular adverse effects of commonly used Bisphosphonates

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