A Comparative Study of Ocular Side Effects of Pulse Steroid Therapy *Versus* Long-Term Oral Steroid Therapy in Steroid Responsiveness Dermatoses

TO THE EDITOR:

Topical and systemic steroids have proven to be invaluable agents in the treatment of a wide range of disorders, but their use is not without potential complications ([8]). Steroid induced-posterior subcapsular cataract (PSC) and steroid-induced glaucoma are the two main ocular complications of conventional corticosteroid administration ([3]). Opportunistic infections of the eye, including bacterial, viral, and fungal infections, are often associated with the use of topical ocular steroids. Posterior subcapsular cataract and open angle glaucoma may occasionally occur with the prolonged use of topical ocular steroids ([6]). However, corticosteroid dexamethasone pulse therapy is regarded to be relatively free of serious suppressive side effects of endogenous hormone physiology, which are seen with long-term oral steroid therapy. Dexamethasone pulse therapy (DPT) consists of giving 100 mg of dexamethasone on 3 consecutive days in 5% dextrose, to be repeated after 28 days. Giving this suprapharmacologic dose does bring about therapeutic effects with minimal side effects. It was originally given by Pasricha and Gupta in 1984 ([5]). This therapy is being given for collagen vascular diseases. For vesiculobullous diseases like pemphigus, dexamethasone cyclophosphamide pulse therapy (DCP) is given which has, in addition, 500 mg of cyclophosphamide added on the second day of pulse therapy and 50 mg of oral cyclophosphamide every day. In moderate and severe erythema nodosum leprosum (ENL) reactions in borderline and lepromatous leprosy, corticosteroids may be necessary initially in high doses and rapidly tapered down over a month ([1]).

Thus, the present study has been done to present a comparative study of ocular side effects of pulse steroid therapy *versus* long-term oral steroid therapy when used for collagen vascular diseases and vesiculobullous skin diseases.

To eliminate the bias caused by age-related changes, this study was conducted on 40 patients, between the ages of 20 years–40 years. This study was undertaken in the Department of Dermatology and Ophthalmology, Dayanand Medical College & Hospital, Ludhiana, India. In the present study, 18 patients were male and 22 were female, and the youngest patient was 21-years-old and the oldest patient was 39-years-old.

The patients were divided into three groups. Group I consisted of 15 cases (30 eyes) who were on long-term oral steroid therapy. Prednisolone was used orally in a single daily dose of 1–2 mg/kg of body weight. Group II consisted of 15 cases (30 eyes) who were on pulse steroid therapy. Dexamethasone pulse therapy (DPT) was given in a dose of 100 mg of dexamethasone in 5% dextrose intravenously for 3 consecutive days, to be repeated after 28 days. Group III consisted of 10 cases (20 eyes) which formed the control group. They were not given any steroid therapy.

On the first visit, all patients underwent visual acuity (VA) recording, slit-lamp examination of lens, measurement of intraocular pressure (IOP) by applanation tonometry and fundus examination. A monthly follow-up was done for visual acuity, changes in lens, and serial recording of intraocular pressure. Any other ocular or systemic side effects were also recorded.

In our study, it was observed that 14 eyes out of 30 (46.7%) in Group I developed cataracts. In Group II, 2 out of 30 eyes (6.7%) developed cataracts. In Group III, no eye out of 20 developed cataracts. Our study is in accordance with the study by Skalka and Prchal, 1980 ([7]), in which 51.28% of all patients who received oral prednisolone showed some degree of posterior subcapsular cataract. In our study, no patients receiving steroids for less

than two years developed cataracts. However, Debnath, 1987 ([2]), reported evidence of cataract formation with steroids as early as 7 months after renal transplantation.

In our study, no eyes developed glaucoma in Groups I, II and III. This study is in accordance with other studies in literature. Debnath, 1987 ([2]), found glaucoma in only 4.9% of steroid-treated patients. However, this study is in contrast with that of Ticho, *et al.*, 1977 ([9]), who found that 47% of steroid-treated patients developed glaucoma.

Also, in our study, cataracts were more common in patients on oral steroids, as compared to patients on pulse steroid therapy. Visual deterioration, due to cataracts was more prevalent in patients on oral steroid therapy, as compared to patients on pulse steroid therapy. A minimum duration for use of steroids was one year, with a maximum duration of four years. In our study, we observed no cataracts in any of our patients receiving steroids for less than two years. The development of cataracts increased with an increase in duration of steroids used in both Groups I and II, but it was more in Group I as compared to Group II. None of the patients in Groups I, II and III developed glaucoma in our study.

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