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**The Judicious use of Topical Corticosteroids in Eye Conditions**

**To the editor:** As A Family Physician involved in providing eye care I could not leave the advert for dexamethasone and chloramphenicol (in the June 2004 issue, opposite page 16) stand without comment.

Although topical dexamethasone is an essential and sight-saving drug it has the potential for sight-losing side-effects. I was surprised to see the advert advocating the use of this combination for amongst others: "acute purulent conjunctivitis and allergic conjunctivitis." These conditions are not sight-threatening and can be treated effectively with other drugs such as chloramphenicol and ant-histamines respectively.

Another indication was "corneal ulceration". As steroids can be disastrous in the presence of Herpes or fungal infection I have been taught that steroids should as a basic principle only be used after accurate diagnosis and exclusion of contra-indications which is best done with the aid of a slitlamp.

I do not think that any ophthalmologist would recommend steroids as first line treatment for any of these conditions and am concerned that the wrong message has given to the readers as most should/would never use topical steroid drops. Maybe you could ask one of the contributing ophthalmologists to write some comments on the use of steroids.

Lastly I am grateful for the focus on Ophthalmology and am looking forward to further eye topics such as recognition of DM retinopathy.

Gustav Thom
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**Comments by Prof David Meyer, Department of Opthalmology, University of Stellenbosch:**

Corticosteroids constitute the most effective means of treating inflammations and diseases caused by immune reactions, both in general medicine and ophthalmology. Their use may, however, lead to serious local and systemic side effects. These potent medications therefore deserve our judicious use as clinicians.

**Action:** Their main activity is exerted at the actual site of inflammation, therefore topical application of corticosteroids to the eye results in suppression of local inflammation. This is achieved by a host of effects *inter alia* the inhibition of all of the following: degranulation of leukocytes and mast cells, cellular bactericidal effect, cellular immune responses, prostaglandin and leukotriene synthesis, lymphokine activity, fibro vascular proliferation and blood vessel proliferation.

**Potency:** Corticosteroids differ in their potency. If hydrocortisone has a relative effect of 1 then dexamethasone and betamethasone have a 25 and 30 times more potent anti-inflammatory effect respectively. Many antibiotic/steroid combination preparations currently on the market contain one of these very potent and long acting steroids.

**Side effects:** Ocular side effects of these drugs are numerous. They include *cataracts* which can develop much quicker in younger persons than in older ones; *glaucoma*, so prevalent that 30% of the general population will respond to steroids with a moderate and 4-5% with a marked rise in intra ocular pressure. Topical application for even 1 week may cause trophic changes in the *cornea* with delay in corneal wound healing. An increased risk for susceptibility to ocular *infections* such as herpes simplex, mycoses and toxoplasmosis exists. *Ptosis*, periocular *dermatitis* and *mydriasis* may also be induced.

**Indications:** Ophthalmological indications for the use of these drugs are numerous, topically they may be used for allergic keratoconjunctivitis, episcleritis, scleritis, conjunctival pemphigoid, immunogenic keratitis, graft rejection, peri-operative inflammation, uveitis and many more. More common indications for systemic use are vasculitis, giant cell arteritis, Thyroid eye disease, orbital pseudotumor, lymphoid hyperplasia etc.

**Topical application:** A 1% suspension of prednisolone acetate exhibits the greatest anti-inflammatory activity of all the corticosteroids on the anterior segment of the eye. Fluoromethalone alcohol suspensions (0.1% and 0.25%) have been found to be almost as effective as dexamethasone or prednisolone acetate 0.125%, while having a distinct advantage of lower incidence of steroid glaucoma. Medrysone 1% is even less likely to cause steroid glaucoma. Since it penetrates poorly, it is mainly used in ocular surface inflammation. Dexamethasone has a longer half-life in ocular tissues and clearly may be used with less frequency and may be more suitable for reaching deeper ocular tissues. Combinations of corticosteroids and antibiotics are popular. They are not indicated for non-infectious inflammatory processes and should be used restrictively.

**Precautions:** A family practitioner may safely prescribe topical corticosteroids provided he/she can monitor the intraocular pressure of the patient, use the ophthalmoscope with enough skill to detect early cataract formation and have fluorescein stain and a cobalt blue light at hand to monitor the corneal surface adequately.

**Futher reading:** Fechner PU, Teichmann KD. Corticosteroids. In: Fechner PU, Teichmann KD, eds. *Ocular Therapeutics: Pharmacology and Clinical Application*. SLACK Incorporated, NJ. 1998:97-106