

APPLICATIONS AND EFFICACY OF TOPICAL N-ACETYLCYSTEINE IN A TERTIARY EYE REFERRAL CENTRE

Purpose: N-Acetyl-cysteine (NAC) is an amino acid that has potent mucolytic, anti-inflammatory and anti-oxidative properties. Traditionally, NAC has been used in paracetamol toxicity and treatment of respiratory conditions. However, its application in clinical ocular therapeutics is not well reported in recent literature despite its use by ophthalmologists in clinical practice.

Methods: Retrospective case series of consecutive patients treated with topical NAC eye drops from 1st January 2012 to 1st January 2017 at a tertiary referral eye centre in Australia. Data extracted from the medical records included demographic data, NAC indication for use and dosage, best-corrected visual acuity (BCVA), clinical outcomes, adverse effects, and subspecialisation of the prescribing ophthalmologist.

Results: 123 eyes from 97 patients (60 females, 37 males; mean age of 63.1) were identified as having been treated with topical NAC. Indications included filamentary keratitis (n = 63), dry eye disease (n = 36), corneal abrasions (n= 19), post- corneal transplantation (n=4) and following chemical injury (n=1). 120 of 123 eyes (97.6%) had improvement in symptoms and/or clinical signs. Adverse events occurred in 11 eyes (8.9%); mostly commonly were either a stinging sensation or the eye drop having a foul odour. The most common regime was topical NAC 10% applied four times daily for a mean treatment period of 4.6 weeks (range 1 to 32 weeks). Corneal specialists prescribed the majority of NAC (81.3%).

Conclusion: Topical NAC may improve the symptoms and signs of filamentary keratitis, dry eye disease, mucous plaques and epithelial injury.