Conjunctivitis is estimated to contribute 1% of ophthalmic problems or disorders seen in primary care setting, and 1 - 4% in all GP consultations worldwide, with bacterial conjunctivitis being the most frequent. Even though it is a self-limiting condition, the prevalence is significant to the general population due to its economic and societal burden (Hovding, 2008).

Patient compliance plays a crucial part in ensuring successful recovery. Unfortunately, noncompliance is one of the most common issues that limits effective treatment. Even though there are many factors that could contribute or cause poor compliance, it narrows down to missed applications due to patients forgetting to take every dose, having difficulty applying the treatment correctly or most often due to the side-effect profile of the product and/ or complex drug dosing regimens (Abelson & Stein, 2014; Jackson et al, 2002).

Non-compliance in self-limiting conditions such as bacterial conjunctivitis is unlikely to result in severe eye complications. However, it can reduce the quality of life and productivity of a patient in addition to increasing their frustration with ongoing symptoms and ‘ineffective’ treatments. This forms a vicious cycle which ultimately reduces the probability of successful treatment and symptom resolution (Abelson & Stein, 2014).

TREATMENT AND COMPLIANCE
Treatment with topical antibiotics has shown great benefits, such as reducing the contagious period and spread of the infection, increasing relief of symptoms, reducing the risk of more severe sight-threatening complications and lastly, the resolution of symptoms allows for children and adults to return to school and work sooner, compared to untreated peers. Poor drug absorption and fast washout rates of some topical treatment options makes it even more difficult to believe that topical treatments provide positive results. However, topical treatments are superior to all other options of administration, especially for front-of-the-eye indications (Abelson & Stein, 2014). To complicate matters, a wide selection of topical, ophthalmic treatment options is available. However, not all ensures for patient convenience and compliance. Numerous international bodies, such as the National Institute for Health and Care Excellence (NICE), American Academy of Ophthalmology (AAO) and American

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Effective TWICE DAILY treatment for bacterial conjunctivitis1,2

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*Reviewed by Dr Saloojee
Dr Mohamed Dawood Saloojee, Ophthalmologist, Gatesville Medical Centre, Cape Town.

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Dr Mohamed Dawood Saloojee, Ophthalmologist, Gatesville Medical Centre, Cape Town.
Optometric Association (AOA) recommend a broad-spectrum topical antibiotic as the treatment of choice in most cases. However, a number of aspects need to be considered when choosing an appropriate (topical) antibiotic, which includes the following: Coverage of relevant bacteria, low bacterial resistance, eradication rate, minimal toxicity, convenience of dosing regime and ease of use (Abelson & Stein, 2014).

The problem is that resistance among ocular bacteria has been observed to be increasing. The overuse of antibiotics for systemic infections and topical antibiotics contributes to the development of drug resistance. So, it is good practice to narrow the antibiotic spectrum. This will not only prevent the prevalence of antimicrobial resistance in communities, but will also reduce cost and toxicity. It has been reported that gram-positive pathogens cause approximately 75% of all bacterial conjunctivitis and gram-negative pathogens only causes 25% of infections in unselected populations (Adebayo et al, 2011). Based on this theory, certain topical antibiotics (i.e. fusidic acid) provides targeted, broad spectrum action against the most common pathogens causing bacterial conjunctivitis.

Nonetheless, whether broad spectrum or narrow spectrum (topical) treatments are recommended, the golden question remains: How can we ensure patient compliance? An effective solution for consideration is to simplify dosing by prescribing treatments that require less frequent dosing compared to multiple daily doses (Abelson & Stein, 2014). The following paragraphs briefly summarise a few clinical trials, illustrating which treatment options for bacterial conjunctivitis allow for better patient compliance.

In a multicentre, randomised, investigator-masked, parallel-group study, the authors compared the clinical and microbiologic efficacy, safety and acceptability of 1% fusidic acid viscous drops with 0.3% tobramycin ophthalmic solution in the treatment of suspected bacterial conjunctivitis. It was reported that significantly more patients in the fusidic acid group than in the tobramycin group rated treatment as convenient or very convenient, particularly among younger patients (97% vs 54%) (p <0.001). The ease of use among the fusidic acid group can be ascribed to the twice-daily dosage regime. Furthermore, even though the compliance was similar between the treatment groups for the older patients, for those aged 2-9 years, compliance was significantly better in the fusidic acid group than in the tobramycin group (85% vs 47%), p <0.001 (Jackson et al, 2002).

Another study compared the use of fusidic acid to chloramphenicol eye drops for the treatment of acute neonatal bacterial conjunctivitis. It was reported that 89% of the neonates treated with fusidic acid were cured, compared to 87% of those treated with Minims Chloramphenicol (n.s). The drug was used as instructed in 90% of patients treated with 1% fusidic acid viscous drops and in 78% of those treated with chloramphenicol (p<0.001). The less tedious regimen associated with fusidic acid also resulted in a higher degree of satisfaction among parents using it. It was reported that 30% of parents perceived the fusidic acid application regimen to be ‘very convenient’.
compared with only 1.7% of parents using chloramphenicol (p <0.026). Therefore, the treatment of neonatal conjunctivitis with fusidic acid is reported to be equally effective, but easier than with chloramphenicol resulting in better compliance and satisfaction (Normann et al, 2002).

A third randomised controlled trial in children and adults with acute bacterial conjunctivitis comparing treatment with fusidic acid 1% viscous drops (one drop every four hours on the first day and then 5-6 times daily), found that topical fusidic acid significantly increased clinical cure rate compared with chloramphenicol. It was reported that 5% of the patients reported mild to moderate itching, stinging, local discomfort using fusidic acid compared to 14% using chloramphenicol. The resistance rate was much higher using chloramphenicol compared to the fusidic acid (55%) compared to the fusidic acid group (16%). A significant difference (p=0.0001) in the clinical cure rate with fusidic acid was 85% compared to 48% with chloramphenicol was reported (Hvidberg, 1987).

An open-label, randomised clinical trial in patients aged >6 months with conjunctivitis evaluating fusidic acid, chloramphenicol and framycetin for 7-14 days investigated the clinical benefit and bacteriological success of treatment with fusidic acid in an area (Tanzania) where resistance is high to commonly used eye anti-infectives. The clinical and bacteriological success was highest among the fusidic acid group (93%, 94%) compared to the other topical antibiotics i.e. chloramphenicol (48%, 63%) and framycetin (74%, 72%). The better effect of fusidic acid could be ascribed to a much lower rate of in vitro resistance (17%) compared to chloramphenicol (58%) and framycetin, 41% (Dirdal, 1987).

Aqueous, topical eye anti-infectives are rapidly washed out of the eye, resulting in insufficient antibacterial activity, requiring frequent applications with intervals of a few hours (Bijsterveld, 1987). However, it is evident that fusidic acid translates into increased patient compliance compared to other treatment options. This can be ascribed to the unique carbomer formulation that allows for a more convenient, twice-daily dosing regimen. The mode of action entails that the fusidic acid combines with the mucoadhesive carbomer polymer, which loses its viscosity when in contact with the tear liquid while the fusidic acid microcrystals remain trapped among the polymer molecules. This allows for the antibiotic to have prolonged contact with the infected site.

Furthermore, the carbomer becomes clear on contact with electrolytes in the tear fluid, causing less blurring than eye ointments. The viscosity of the carbomer also allows for easy application, enabling the twice-daily dosage regimen, which encourages patient compliance (Jackson et al, 2002; Normann et al, 2002).

References available on request.