Use of Topical Antibiotics with Intravitreal Injections

**Background**

Intravitreal injections are increasing in frequency due to the widespread adoption of anti-VEGF therapies for the management of retinal diseases. Many physicians continue to use topical antibiotics alongside intravitreal injections with the expectation of minimizing the risk of serious complications such as endophthalmitis, yet evidence-based guidelines are lacking on the use of topical antibiotics during intravitreal injection procedures.

A review of the literature and available evidence was conducted to:

- Determine the validity of the use of topical antibiotics as a prophylactic measure alongside intravitreal anti-VEGF injections
- Evaluate the potential effect of topical antibiotics on the prevention or reduction of intravitreal injection–associated infections

**Viewpoint**

An aseptic technique for intravitreal injection is essential for minimizing the risk of serious complications such as endophthalmitis. Procedures should ensure adequate anesthesia and asepsis, including a topical broad-spectrum microbicide (such as povidone-iodine), and should be conducted according to prescribing information, medical standards, and applicable guidelines.

Based on an extensive literature search, the Vision Academy does not recommend the use of topical antibiotics alongside intravitreal injections.

- There is no evidence for prevention of infection
- There is no evidence for the reduction of infection-related morbidity
- Repeated use is proven to increase the occurrence of antibiotic resistance and potentially increased virulence
- There is additional cost and burden to patients, physicians, and healthcare systems

Following intravitreal injection, patients should be instructed to report any symptoms suggestive of endophthalmitis (e.g. eye pain, redness of the eye, photophobia, and blurring of vision) without delay.

**Further considerations**

Topical antibiotic use prior to the injection procedure makes logical sense, since infection typically results at the time of injection; however, there have been no prospective studies demonstrating that pre-injection antibiotics reduce the risk of endophthalmitis. In addition, application of topical antibiotics, neither concurrent with nor after the injection procedure, has not shown additional benefit over topical broad-spectrum microbicides and antiseptic administration.

Endorsed by the Vision Academy in September 2016.
Date of review: September 2017
Antibiotic resistance is a serious concern. In multiple large case series comparing intravitreal injection with or without the use of antibiotics, there is a numerical trend in most toward increased rates of endophthalmitis.\textsuperscript{1,3} Moreover, the repetitive nature of intraocular injection of anti-VEGF agents, and thus repeated use of topical antibiotics, dramatically increases the potential for colonization of the ocular surface with resistant bacteria.\textsuperscript{4,5} This approach also interferes with clinical care models and increases cost and patient inconvenience, particularly when patients are managed in a reactive/PRN manner. Furthermore, topical antibiotics have poor penetration into the eye due to various physiological barriers, so they do not reach therapeutic levels in the vitreous.\textsuperscript{6}

There are significant regional differences concerning the use of topical antibiotics in intravitreal injection clinics. In 2014, 84% of physicians from the Asia-Pacific region said they used topical antibiotics, compared with only 11% of US physicians.\textsuperscript{7} Reasons for continued use include personal preference, peer-pressure, and medico-legal concerns. In Japan, the use of topical antibiotics alongside anti-VEGF injections is mandated by the label and considered standard use. Therefore, changes in practice habits may be achieved through the revision of drug labels and the amendment of local and professional society guidelines.

References