Gabapentin for Dry Eye?

In response to “New Drug Highlights Inflammation’s Role in Dry Eye Disease” (Clinical Update, February), it is important to consider whether another mechanism of dry eye disease (DED) could be targeted. Although lifitegrast (Xiidra) targets a novel pathway, it is another drug that targets inflammation, like its predecessor, cyclosporine (Restasis). Because DED is not fully understood, the ophthalmology community has struggled to adequately treat many cases of DED by targeting the inflammatory pathways alone. Edward J. Holland, MD, quoted in the article, astutely states, “Dry eye disease is complex because it varies in clinical presentation and can be caused by a variety of factors.” Many of these factors have not yet been discovered and, therefore, have not been targeted.

A recent article suggests that dry eye pain could be neuropathic in nature and that as-yet unrecognized mechanisms could be targeted to tackle this disease.1 The purpose of this letter to the editor is to present some arguments for why topical gabapentin, the oral form of which is the standard of care, could be targeted. Although gabapentin has been used orally for many years to treat other forms of neuropathic pain, topical gabapentin could potentially have a greater effectiveness than the oral formulation in pain reduction without the side effect profile associated with systemic exposure and potential side effects. In 2014, a patent was filed for topical gabapentin eyedrops.2 The intense ocular pain many people experience from ophthalmic diseases such as herpes zoster, glaucoma, uveitis, optic neuritis, and dry eye could now have local relief. Unfortunately, although the patent was approved, the drops have not yet been synthesized for either commercial or investigational use.

Currently, there is no literature discussing the role of topical gabapentin in treating ocular diseases. Future research should look at the possibility of using gabapentin drops to treat ocular pain. Topical gabapentin could potentially have a greater effectiveness than the oral formulation in pain reduction without the side effect profile associated with systemic absorption, and the oral drug has already been shown to treat other forms of neuropathic pain.

While lifitegrast might be the first new medication in 13 years to be approved for patients with DED, it focuses on the inflammatory pathway much like its predecessor, Restasis. I present here a novel (and possibly more efficacious) approach to tackling DED. The ability to reformulate gabapentin, a drug already approved by the FDA, might provide a solution to this chronic problem.

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