Wyoming Drug Utilization Review

Dry Eye Disease

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Dry eye disease (DED) is a common, multifactorial disease making up one of the most common complaints seen by ophthalmologists. As many as one in four patients report dry eye to their ophthalmologist.[1] DED manifests with ocular discomfort, visual disturbance, and tear- film instability.[2] The conditions of DED lead to secondary inflammation, and potential damage to the ocular surface. Symptoms include: burning or stinging sensation, a gritty or sandy feeling, pain or redness, blurred vision, and paradoxical tearing.[3] Patients with dry eye report a lower quality of life, including pain, difficulties using a computer or reading for long periods of time, and decreased tolerance of environmental conditions.[1] Dry eye symptoms are more common in older age and in the female gender.[1] Untreated dry eye can result in ulcers, corneal scarring, and some vision loss.[3] DED can be divided into two major subtypes: aqueous deficient and evaporative. However, most patients with dry eye have some mixture of both.[2]

Aqueous-deficient dry eye (ADDE) is the result of insufficient lacrimal tear secretion and volume.[4] This results in tear hyperosmolarity because the evaporation happens faster than tears are produced. The resulting hyperosmolarity triggers an inflammatory response on the eye epithelium. ADDE can be further divided into two subtypes: Sjögren, and non-Sjögren.[4] Sjögren syndrome dry eye is characterized by an autoimmune dysfunction targeting lacrimal and salivary glands, causing hyposecretion. Sjögren syndrome is present in about 10% of patients with significant ADDE.[4] Sjögren dry eye is treated differently than other forms of dry eye, because Sjögren syndrome is a multifaceted disease. Treatment typically involves cholinergic agonists.[2] Non-Sjögren syndrome includes forms of dry eye due to insufficient tear production where Sjögren syndrome is ruled out. This includes many factors such as primary deficiencies, secondary deficiencies, obstruction of ducts, and reflex hyposecretion. The most common primary deficiency is age-related. Secondary deficiencies are related to conditions such as lymphomas, AIDS, and graft vs. host disease among others.[4]

The second major subtype of dry eye, evaporative, is due to excessive water loss from the ocular surface with normal tear function. There are two major subtypes of evaporative dry eye: intrinsic and extrinsic.[4] Intrinsic factors include meibomian gland dysfunction, disorders of lid aperture, and low blink rate.[4] Meibomian glands are the oil secreting glands in the eyes, and dysfunction typically results in obstruction of the gland. Meibomian gland dysfunction is also referred to as posterior blepharitis.[4] The mainstay of treatment for posterior blepharitis is eyelid hygiene using warm compress and lid scrubs.[5] Extrinsic factors include ocular surface disorders, contact lens wear, and allergic conjunctivitis.[4] Causes of ocular surface disorders include: vitamin A deficiency, and topical drugs or preservatives.[4]

Environmental and social factors also have implications for dry eye. Dry eye is often associated with dry or windy climates, exposure to dust or allergens, and extreme weather conditions.[1] Social factors including smoking, and prolonged screen and reading time may exacerbate dry eye symptoms.[1]

Certain medications can also cause dry eye. Medications that commonly contribute to dry eye include: anticholinergic drugs, antihistamines, beta-blockers, decongestants, diuretics, oral contraceptives, postmenopausal estrogen, retinoids, SSRIs, and tricyclic antidepressants.[6]

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Treatment
Dry eye disease can be classified as mild, moderate or severe with increasing frequency of symptoms, and more consistent visual symptoms as the severity increases.[2]

First line treatment of dry eye always includes nonpharmacologic options.[2] These may include environmental and social modifications. Some non-drug measures include: avoiding long sessions of reading, computer work and watching TV.[6] Environmental modifications include avoiding dry or dusty environments, wearing eye protection in sunny or windy outdoor environments, and minimizing exposure to air currents such as fans or air conditioning.[6] Other suggestions include: using a humidifier, taking in adequate fluids, avoiding excessive alcohol consumption, quitting smoking, and doing warm compress or lid scrubs.[6]

In addition to lifestyle modifications, ophthalmic drops such as artificial tears are a suitable first line treatment for dry eyes for mild to moderate cases.[2] Artificial tears are available over the counter (OTC), and are usually started four times daily. Frequency can be increased for more severe symptoms. If patients are using the drops greater than four times a day, or are planning on using drops long term, recommend using preservative free drops. Avoid drops with a vasoconstrictor, such as red eye relief drops for routine use.[6]

Patients may also try eye ointments or gels. These typically work well and control symptoms for longer than drops alone, but cause blurry vision. Ointments or gels are recommended to apply at night and help improve morning symptoms.[6]

Omega-3 fatty acid supplements have been reportedly used for dry eye, but there insufficient evidence for its efficacy.[6]

Prescription Options
Topical corticosteroids are effective for short term relief of dry eye. However, these agents should be avoided for long-term use, due to the risk of increased ocular pressure and cataract formation.[2]

Cyclosporine (Restasis) is an immunomodulatory drug. Cyclosporine is generally recommended as a second-line treatment.[(6)] Cyclosporine is approved to treat the symptoms of dry eye. The eye drops are administered twice daily, and adverse effects include: burning or stinging sensation in the eye.[6] It may take up to four weeks before patients have a noticeable improvement of symptoms while using cyclosporine. An ophthalmic steroid may be used for the first few weeks while cyclosporine starts working.[6]

Lifitegrast was approved by the FDA in July of 2016 under the brand name Xiidra. Lifitegrast belongs to a new class of drugs called lymphocyte function associated-antigen 1 (LFA-1) antagonists.[7] Lifitegrast is generally recommended as a second line treatment for dry eyes.[6] Lifitegrast is approved to treat both the signs and symptoms of DED.[7] The eye drops are used twice daily, and common adverse effects include: eye discomfort, reduced visual acuity, and taste disturbances. Patients may start to see an improvement in as soon as two weeks.[6]

Hydroxypropyl cellulose ophthalmic insert (Lacrisert) is another prescription product used for dry eyes.[8] It is indicated for moderate to severe dry eye and is a rod shaped insert placed into the inferior cul-de-sac of the eye.[9] Once inserted, the rod gradually releases hydroxypropyl cellulose. An insert is placed into the eye once daily, though some patients may require twice daily use. Adverse effects include temporary blurring of vision, ocular discomfort, photophobia, stickiness of eyelashes, and eyelid edema.[9] Proper placement of the device needs to be discussed with the patient because improper placement can result in expulsion of the device or corneal abrasion.[9]

Surgical
Patients who have aqueous tear deficiency may benefit from punctal occlusion if other options are ineffective or inappropriate. Punctal occlusion is accomplished by lodging an occlusive plug such as silicone or thermal labile polymer. Silicone plugs may be retained for many years, but can also be removed if they are irritating.[2]

Patients with severe dry eye can also undergo permanent closure of their punctum by thermal or laser cautery if punctal occlusion therapy is beneficial and long term occlusion is warranted, or if plugs are continually lost.[2]

DED has significant impact on patient quality of life and performance, and is associated with suboptimal results after surgery.[10] Determining the underlying mechanism of the dry eye is important in treatment.[2] Some types of dry eye can be fixed by treating the underlying pathology. Conditions such as Sjögren syndrome and blepharitis require separate treatment from other cases of dry eye. Patients should be educated about the chronic nature of dry eye and

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P&T Committee Meeting Update

The P&T Committee met for its quarterly business meeting on August 10, 2017.

Highlights of this meeting include:

Medicity is the vendor selected by the Department of Health for the Health Information Exchange. October 1, 2017 is the projected implementation date.

Dupixent will be limited to adults and listed as a step 3 agent for atopic dermatitis on the preferred drug list.

Esbriet will be limited to its indication of idiopathic pulmonary fibrosis. In addition, a pulmonary consult within the previous year will be required for approval.

Tymlos will require a 12 month trial and failure of other osteoporosis therapy prior to approval.

Vosevi is the first medication approved for retreatment of Hepatitis C. This medication will require prior authorization. It is important to note that failure due to non-compliance will not be considered for approval. **A documented SVR12 following previous therapy will be required for approval of retreatment.**

Ocrevus will be approved for those with primary progressive multiple sclerosis. For those with relapsing forms, trial and failure of traditional medications will be required prior to approval.

The Department of Health will conduct cost analyses on Kevzara and Siliq to determine placement on the preferred drug list. There is no evidence of a benefit of either drug over existing medications in their respective classes.

Austedo, Ingrezza, and Xadago will be limited to their indications.

The proposed prior authorization criteria will be posted for public comment at www.uwyo.edu/DUR. Comments may be sent by email to alewis13@uwyo.edu or by mail to: Wyoming Drug Utilization Review Board, Dept. 3375, 1000 E. University Avenue, Laramie, WY 82071. Comments should be received prior to November 1, 2017.

The next P&T Committee meeting will be held November 9, 2017 in Cheyenne. An agenda will be posted approximately two weeks prior to the meeting.

Next P&T Committee Meeting

Thursday, November 9, 2017

P & T Committee meetings are held quarterly in Cheyenne at Laramie County Community College, 10 am - 1 pm. Visit the WY-DUR website at *www.uwyo.edu/DUR* for meeting details.

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understand conditions that aggravate dry eye so they can be avoided. Treating any contributory factors for dry eye is imperative to successful treatment.[2] Patients should set realistic expectations about DED, and goals should be discussed.[2] Patients should be thoroughly evaluated for the cause of dry eye in order to optimize treatment. Treatment options as well as benefits and risks should be discussed with the patient when choosing therapy.

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