Treatments for Thyroid Eye Disease

Lubricants

Treatments during the active stage of Thyroid eye disease (TED) for most people will involve soothing or ‘moisturising’ eyes which may feel dry, gritty, watery or uncomfortable. Treatments are likely to be eye drops (a watery liquid), gels (which are thicker and last longer) and ointments (which provide more lubrication, but which may cause blurring of vision). There are a range of preparations available, so if the first option does not work, discuss others with your doctor. If the eye drops irritate your eyes, you may need preservative-free drops.

Selenium supplements

Some evidence suggests that taking selenium supplements (200 micrograms daily) for 6 months may help people with mild to moderate, active thyroid eye disease. It is important to check with your doctor whether taking supplements is safe for you, especially if you are taking other medications as well.

Steroids

In cases where there is more significant inflammation your eyes may need to be treated with steroids which aim to suppress the immune system which is affecting the tissues behind the eyes. These should help reduce redness and swelling of the eyes and the eyelids and can help with double vision. However, steroids are not very effective at reducing protrusion of the eyes. Steroids may be given as tablets or - more effectively- intravenously.

Immunosuppressant agents and radiotherapy

Sometimes steroid treatments can be combined with or if unresponsive switched to other immunosuppressive agents. In more severe cases additional orbital radiotherapy treatment may also be considered to treat the tissues around the eyeball and prevent optic nerve damage.

Other targeted treatments (sometimes called biologic agents), including Teprotumumab (IGF-1 Receptor-blocker), Rituximab (a B-cell–depleting monoclonal antibody) and Tocilizumab (an interleukin-6 receptor antagonist), widely used in other

inflammatory conditions have also been investigated for TED, with varying degrees of clinical efficacy.

Even though these treatments represent progress in the options that are available, they do have limitations, including:

- high cost
- restricted country specific availability outside specialist centres
- potential for significant side effects, including high blood sugar levels (hyperglycaemia) and hearing loss associated with IGF-1R inhibition.

This may mean the treatments remain difficult to access and are not the best choice for all patients. In addition, because these treatments are relatively new, long-term data regarding their safety and lasting effectiveness remain limited. For this reason, clinicians will continue to monitor closely how they work in routine clinical practice. This ongoing review will ensure the treatments remain safe and effective for patients over time.

Orbital decompression surgery

In very severe cases, emergency orbital decompression surgery may be needed to create more space for the enlarged soft tissues behind the eyes. It can be performed as an emergency to relieve pressure on the optic nerve and prevent sight loss. However, it is more commonly used when the active stage of TED has burnt out, if there is a lot of protrusion of the eyeballs. People can sometimes be left with some double vision after decompression surgery. Changing the position of the eyes can change the path of the eye muscles with consecutive (more) double vision and can also affect the appearance of the eyelids. People may therefore need further surgical procedures following decompression.

Managing double vision

An orthoptist is an eye professional who is expert in managing double vision. They will advise you about the different options which may be suitable to alleviate any sight difficulties you have. During the active phase these are more likely to involve prisms attached to your glasses, or an occlusion (a patch or filter) which can temporarily cover one eye.

If there is some remaining double vision once the TED has become inactive, it may be treated with eye muscle surgery to re-align the eyes, or prisms incorporated into your spectacles. Alternatively, botulinum toxin (Botox) can be injected into the eye muscles to help align the eyes, although the effect is temporary.

Eyelid surgery

After the active stage of TED has burnt out, this surgery can be helpful to alter the position of the eye lids. It is used to improve appearance, eyelid closure and the comfort of the eyes.

If more than one surgical procedure is needed, it is usual for decompression to be done first, followed by squint surgery and then eyelid surgery.

There are newer treatments being developed but some of these are not yet available. Many of these treatments have not yet been compared to steroid injections and they are much more costly than steroids, so ongoing research is still needed to determine their place in patient care. You should ask your specialist doctor if you may be eligible to take part in any clinical trials for these newer treatments.

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