

EYE RESEARCH CENTER

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Research News

Author

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Title

Trabeculoplasty: Early and Often?

Summary

Many of us were trained that trabeculoplasty should be used as adjunct therapy following initial medication use. Additionally, conventional wisdom over the years suggested that while trabeculoplasty is potentially repeatable, efficacy may wane with subsequent sessions. What does the recent literature tell us about these concepts?

Over the past decade, trabeculoplasty has gained widespread acceptance as first line therapy for open angle glaucoma. One of the most significant recent studies in this arena, the LiGHT Study, supported the use of trabeculoplasty as first line treatment for ocular hypertension or glaucoma. Numerous smaller studies, commentaries, and meta-analyses are in agreement with this conclusion. In addition, the American Academy of Ophthalmology's Preferred Practice Pattern advocates laser therapy as first line therapy when clinically appropriate. Based on informal conversations, it appears that current curricula at many schools are consistent with this treatment approach (a departure from how many of us were trained).

If we are turning to SLT earlier in the treatment paradigm, it logically follows that we may need to consider repeat treatments more frequently. What does the literature tell us about repeat trabeculoplasty? Many of us were trained to be skeptical regarding the efficacy of repeat treatment. Conventional wisdom has held that SLT treatments may become less effective over time, so one should "keep them in one's back pocket" so to speak. On the contrary, the evidence is building that repeat SLT may have an equivalent duration of action (if not longer) versus initial SLT. The aforementioned LiGHT Study reached this conclusion, as did a 2019 review of eight studies 2009-2016, ranging from 38-137 eyes. In fact, these authors advocate consideration of repeat SLT even if the initial laser was unsuccessful. Finally, a 2018 review suggested that shorter time intervals between trabeculoplasties may yield higher success rates. This may be related to ongoing action of the initial SLT. This has led some to contemplate a "dental model" of regularly scheduled trabeculoplasties in select POAG patients.

The paradigm is shifting regarding the role of SLT in open angle glaucoma. Be sure to re-examine the role of this therapy in your practice.

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Research News

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Title

The Role of Zinc in COVID-19

Summary

On December 12, 2019, a new coronavirus (SAR-COV-2) was found in Wuhan, China. SAR-COV-2 is causative for severe acute respiratory syndrome. COVID-19 has been a threat to healthcare professionals, society, patients, and the economy up until now. Because of its anti-inflammatory and antioxidant properties, zinc has been used as a therapeutic since the beginning of this virus. These nutrients are believed to have an important role in immune system cell maintenance and infection resistance.

Pal et al., 2021 (1) argued that the rationale for zinc use derived from the discovery that Zn ions and Zn ionophores, such as pyrithione (PT), had previously been characterized as strong inhibitors of several RNA viruses. Furthermore, attacking RNA-dependent RNA polymerase (RdRps) of RNA viruses such as SARS-COV-2 is more appropriate for antiviral medication development since RdRp activity is entirely virus-specific and may be inhibited without impairing important cellular activities. Zn ions have previously been linked to a variety of cellular functions, including the appropriate folding and activation of several cellular enzymes and transcription factors. In contrast, Zn +2 is most likely an essential cofactor for a variety of viral proteins. At high concentrations, Zn +2 can act as an intracellular second messenger, causing apoptosis or a reduction in protein synthesis (2-4).

The use of zinc for the prevention and treatment of COVID-19 is now the focus of several clinical trials (5). Elements of zinc should be taken in amounts ranging from 11 to 8 mg for men and women (6). 220 mg twice daily is the maximum dosage of zinc sulfate that has been utilized in registered clinical trials for COVID-19 patients (5). In contrast, prolonged zinc supplementation might result in copper deficiency and reversible hematologic abnormalities (7). In conclusion, Zinc has not been studied extensively for COVID-19, so no decision can be made about whether it should be used, but if it is, the dose should not exceed the recommended daily allowance.

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