Implants for Ocular Disease

Although the exact cause of keratoconjunctivitis sicca (KCS) is unknown, an underlying autoimmune disease affecting the balance between T-suppressor and T-helper cells is suspected. Topical cyclosporine A (CSA) is an effective treatment, as it has immunomodulatory and tear-stimulating properties. This retrospective study evaluated the effect of episcleral silicone matrix CSA implants in dogs with KCS. Dogs were divided into 2 groups: Good candidates (GC), or those with Schirmer tear test (STT) values >5 but <10 mm/min; and poor candidates (PC), or those with STT values <5 mm/min. PC dogs had also failed to respond to topical CSA or tacrolimus. Twenty-seven eyes from 25 dogs (15 GC, 12 PC) received implants. Response was evaluated using STT values and clinical scoring (ocular discharge, conjunctival hyperemia, corneal neovascularization, corneal opacity). The mean follow-up was 18 ± 2 months for GC and 10.4 ± 15 months for PC. Both groups experienced statistically significant increases in STT values over baseline, with maximum STT increases at 90 days. However, there was no significant improvement in STT from baseline at 330 and 300 days for GC and PC, respectively. Significant improvement in clinical scores was noted from 60–90 days and remained significant up to 480–540 days post-implant.

Commentary

Owner compliance and patient acceptance of medication administration are important factors, as chronic diseases requiring ongoing topical treatment are commonly diagnosed. At this time, episcleral cyclosporine implants are unlikely to become the recommended standard of care for most KCS dogs because of the need for general anesthesia, expectation of repeated implant placement, risk for implant extrusion, lack of an available product, and general absence of prospective clinical studies. However, a cyclosporine-containing implant may represent a potential future option, improving care for patients where topical treatment is not feasible. Finally, if affordable, safe, and accessible implant devices intended to deliver a longer duration of medication are developed, this treatment option may become appropriate for a wider spectrum of dogs diagnosed with KCS.—Allyson Gosling, DVM

Source


Alternative Treatments for Osteosarcoma

The aggressive metastatic potential of osteosarcoma (OS) makes the development of new frontline or secondary therapies appealing. The flavone baicalein, which has its origins in traditional Chinese medicine, has been reported to have antineoplastic and antiinflammatory effects. This study investigated the effects of baicalein on 3 OS cell lines in vitro. Results suggested that canine OS cells are sensitive to the cytostatic effects of baicalein at concentrations of 0.8–2.0 µM. At concentrations in the range of 1–10 µM, baicalein showed some effectiveness in inducing apoptosis in 2 of the OS cell lines. This effect appeared to be initiated by alterations in mitochondrial membrane permeability via decreases in the antiapoptotic Bcl-2 protein family. Overall, the authors concluded that significant additional research may find an adjunctive therapy purpose for baicalein but not a primary role in the treatment of OS.

Commentary

OS is a devastating disease with limited medical treatment options for metastatic disease beyond the standard cytotoxic course that follows limb amputation. Other novel approaches have recently been under development in clinical trials including targeted therapy, inhalational interleukin-2, and nutraceuticals such as artemisinin. This research may lead to another drug that can contribute to the constellation of therapies. It is, however, at best a secondary player and may diminish the promise of other flavones. It may be better to focus on therapies that have been through extensive testing and provide good quality of life rather than alternative therapies with only a chance of efficacy. In human medicine, the place of alternative therapy is well delineated by algorithm after other opportunities have been exhausted.—Ewan Wolff, DVM, PhD

Source


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