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Complementary and Integrative Medicine: Origins and Expanding Horizons 891
Matthew C. Miller

This article is an introduction to the concepts of complementary, alternative, and integrative medicine. It discusses the scope and prevalence of complementary and integrative medicine (CIM) use among otolaryngology patients. Specific types of CIM are characterized in the context of their origins, philosophic and historical bases, scientific evidence, and applicability to the practice of otolaryngology. The author's intent is to provide a framework for discussing CIM with patients and integrate into treatment paradigms in an evidence-based manner.

Healthy Aging: Strategies to Slow the Process 899
Caroline Casey and Michael Seidman

Aging, an ever-present process, is a part of every living organism’s life cycle. Gerontology, the study of the biological, social, psychological aspects of aging, is a field that has been around since the 1930s, when the human inquiry into aging began to emerge. Aging can be characterized by the external changes, wrinkles, graying of the hair, among other changes, and lesser-seen but still important changes, presbycusis, arteriosclerosis, osteoporosis, cognitive decline, sarcopenia, and more. There is a strong drive to uncover as much as we can about the process of aging and the ways to delay its progression.

Diet and Health in Otolaryngology 909
Hailey M. Juszczak and Richard M. Rosenfeld

Diet is essential to health and can modulate inflammatory markers, the microbiota, and epigenetic outcomes. Proper nutrition is also key to good postsurgical outcomes. Diet is challenging to study, resulting in a relative dearth of influential studies. There is substantial evidence regarding the benefits of a whole food plant-predominant diet on health and longevity, in general, but limited evidence regarding otolaryngologic disorders. Diet may be associated with the risk of head and neck cancer, hearing loss, laryngopharyngeal reflux, and sinonasal symptoms. Evidence, however, is heterogenous and often insufficient for treatment recommendations. Many opportunities exist for future research and expansion..
Why Otolaryngologists Should Be Interested in Psychedelic Medicine

Benjamin F. Asher

As psychedelic medicine is becoming mainstream, physicians need to know something about these medications, their indications, contraindications, and potential for research. This article is a brief overview of the subject with some ideas of how psychedelic medicines can impact the practice of Otolaryngology–Head and Neck Surgery.

Probiotics for Otolaryngologic Disorders

Agnes Czibulka

Chronic low-level inflammation is a causative factor in many of our common diseases. Switching to an anti-inflammatory diet is an important step that patients can take in for rectifying this risk factor. In this review, the author discusses the essential components of an anti-inflammatory diet and its contribution not only to the overall well-being but also to the body's defense against disease. The human microbiome is reviewed in detail and dietary connections and recommendations are explained for several otolaryngologic conditions.

Integrative Approach to Rhinosinusitis: An Update

Malcolm B. Taw, Chau T. Nguyen, and Marilene B. Wang

Rhinosinusitis is characterized by inflammation of the mucosa involving the paranasal sinuses and the nasal cavity and is one of the most common and significant health care problems, with significant impairment of quality of life. Current standard conventional management of rhinosinusitis commonly uses multiple therapeutic modalities to break the cycle of chronic disease. However, to date, there is no consensus as to the optimal treatment algorithm for patients with chronic rhinosinusitis. There is a growing interest in the use of complementary and integrative medicine for the treatment of rhinosinusitis. This article update focuses on an integrative approach to rhinosinusitis.

Allergies and Natural Alternatives

Walter M. Jongbloed and Seth M. Brown

Complementary and integrative medicine therapies in the treatment of allergy and allergic rhinitis (AR) are divided broadly into the categories of nutritional supplements, herbal supplements, Ayurvedic, and Chinese traditional medicine. Some therapies are likely completely safe, such as Manuka honey, with no known side effects. Others have significant risks, such as ephedra, which was ultimately banned for use by the Food and Drug Administration. The efficacy of these therapies is varied and under-researched. The therapies with the strongest evidence in the treatment of allergy and AR are Manuka honey, butterbur, and Sinupret.
The Use of Antioxidants in the Prevention and Treatment of Noise-Induced Hearing Loss

Haley Hullfish, Luis P. Roldan, and Michael E. Hoffer

As of today, there are no therapeutic measures for the prevention or treatment of noise-induced hearing loss (NIHL). The current preventative measures, including avoidance and personal protective hearing equipment, do not appear to be sufficient because there is an increasing number of people with NIHL, especially in the adolescent population. Therefore, we must find a therapy that prevents the impact of noise on hearing. Antioxidants are a promising option in preventing the damaging effects of noise by targeting free radicals but further studies are needed to confirm their efficacy in humans.

Complementary and Integrative Medicine in Head and Neck Cancer

Joseph F. Goodman and Marilene B. Wang

Complementary/integrative medicine (CIM) is an evolving area of collaboration between oncology, patient and their beliefs, and practitioners of complementary medicine. Evidence-informed decision-making is necessary to advise patients on which treatments may be incorporated into standard of care treatments for cancer. Patients use CIM for a variety of reasons and often have unrealistic expectations of cure or disease modifications; on the other hand, there is increasing evidence that symptoms, side effects, and dysfunction related to cancer and its treatment can be ameliorated by CIM approaches to improve patient satisfaction and quality of life. Open communication between patients and providers is paramount.

Complementary and Integrative Medicine and the Voice

Karuna Dewan, Vanessa Lopez, and Nausheen Jamal

Dysphonia is a ubiquitous problem impacting a broad range of people. As communication is central to the human experience, any perturbation of the voice can be frustrating for the patient and the physician. Nutritional, psychological, and physical means of preventing and treating hoarseness have been used by humans since the beginning of written record. Today, we use a selection of these approaches, along with traditional medicine, to alleviate problems of the vocal tract.

Migrainous Vertigo, Tinnitus, and Ear Symptoms and Alternatives

Mehdi Abouzari, Karen Tawk, Darlene Lee, and Hamid R. Djalilian

Migraine headaches frequently coexist with vestibular symptoms such as vertigo, motion sickness, and gait instability. Migraine-related vasospasm can also damage the inner ear, which results in symptoms such as sudden sensorineural hearing loss and resultant tinnitus. The pathophysiology of these symptoms is not yet fully understood, and despite their prevalence, there is no universally approved management. This review summarizes the data on complementary and integrative medicine in treating patients with migrainous ear disorders.
The use of complementary and integrative medicine has increased. It is estimated that one-third of the population of the United States uses some form of alternative medicine. Physicians should consider integrative medicine therapies. Alternative medical therapies for the common cold and influenza include herbal supplements, dietary supplements, diet, and other adjunct therapies. However, it is important to research and study these therapies. Therefore, communication with patients and other healthcare providers is important. This will ensure effective and positive patient care experiences. Further randomized clinical trials are necessary to further establish the role of various alternative options.

Conventional therapies for obstructive sleep apnea (OSA), including CPAP and oral appliances, offer the best opportunity for symptomatic improvement and reduction in OSA overall health impact. Integrative medicine brings conventional and complementary approaches together in a coordinated way. With rising obesity rates, weight loss and lifestyle programs seem to be the most favorable integrative methods to combine with conventional OSA therapies. Complementary and integrative approaches to OSA management are varied and, in conjunction with conventional methods, may offer some reduction in the apnea-hypopnea index.

Complementary/integrative medicine can be used in treating otitis media, especially during the watchful waiting phase. Elimination of risk factors can be important. Products such as echinacea, xylitol, and probiotics may help in prevention. Herbal eardrop formulations can relieve symptoms in some patients. Other modalities such as homeopathy can lead to faster relief of symptoms in combination with conventional therapy. Chinese, Japanese, and other forms of traditional medicine have varying formulations with unclear safety, but initial results are promising. Most studies are limited by methodological failures and small sample sizes, emphasizing the need for continued research in this area.

Whole person (holistic) health deals with the mind–body–spirit connection as a unified domain. Balancing the whole person’s health makes it possible for cells, tissues, and fluids that are out of balance in disease to come back into balance as the person heals from illness. The Automatic Pattern Recognition and Interruption system can facilitate rapid change in people, once they are freed up from subconscious mind constraints. The goal of the modern, transformed health-care system should be to combine the best of conventional care and whole person health to produce the best health care on the planet.
Acupuncture and the Otolaryngology-Head & Neck Surgery Patient

Chau T. Nguyen and Malcolm B. Taw

The use of acupuncture among US adults was estimated at nearly 40% in 2012. A study from the United Kingdom in 2010 found 60% of otolaryngologic patients had used a form of complementary or integrative medicine, with greater than a third in the last year alone. Acupuncture, a therapeutic modality of traditional Chinese medicine, has been used for millennia in Asian countries. Within otolaryngology, acupuncture has been used for a variety of conditions encompassing otology, laryngology, rhinology, and pediatrics. Herein, we review the current literature on the applications of acupuncture for a range of ENT disorders.

Endocannabinoid System and the Otolaryngologist

Brandon Tapasak, Luke Edelmayer, and Michael D. Seidman

The endocannabinoid system is located throughout the central and peripheral nervous systems, endocrine system, gastrointestinal system, and within inflammatory cells. The use of medical cannabinoids has been gaining traction as a viable treatment option for varying illnesses in recent years. Research is ongoing looking at the effect of cannabinoids for treatment of common otolaryngologic pathologies. This article identifies common otolaryngologic pathologies where cannabinoids may have benefit, discusses potential drawbacks to cannabinoid use, and suggests future directions for research in the application of medical cannabinoids.

Establishing Healthy Lifestyle Choices Early: How to Counsel Children and Their Parents

Laith Mukdad and Nina L. Shapiro

Promoting childhood and adolescent health and long-term well-being requires an emphasis on preventative care and anticipatory guidance. In this review, the authors will focus on pertinent ear, nose, and throat preventative health in children, providing clinicians with relevant and succinct information to counsel children and their parents on the following essential subjects: foreign body aspiration and ingestion, upper respiratory infection prevention, noise exposure risks, aural hygiene, risks of primary and secondhand smoke exposure, and sleep hygiene.

Recent Advancements in Understanding the Gut Microbiome and the Inner Ear Axis

Alexa J. Denton, Dimitri A. Godur, Jeenu Mittal, Nathalie B. Bencie, Rahul Mittal, and Adrien A. Eshraghi

The gut microbiome and its dynamic association with organ systems beyond the gastrointestinal tract, such as the nervous and cardiovascular systems, is an emerging area of research. Although the role of the gut microbiome has been extensively characterized in the gut–brain axis, the implications of gut dysbiosis in inner ear inflammation and hearing deficits have still not been explored. With some similarities outlined between the blood–brain barrier (BBB) and the blood labyrinth barrier (BLB) of the inner ear, this review aims to explore the axis between the gut microbiome and the inner ear as it pertains to their bidirectional communication.