Report examines relationship between nasal zinc gels and loss of sense of smell

July 19 2010

An evaluation of 25 patients and a review of reports of clinical, biological and experimental data suggest that over-the-counter, homeopathic nasal zinc therapies may be associated with a reduced sense of smell, according to a report in the July issue of *Archives of Otolaryngology-Head & Neck Surgery*.

"Intranasal zinc gluconate is a popular over-the-counter alternative therapy that is used for prophylaxis [prevention] and treatment of the common cold," the authors write as background information in the article. "The efficacy of this intervention is questionable, with a recent structured review demonstrating insufficient evidence to support any therapeutic effectiveness of zinc. Multiple randomized, double-blind, placebo-controlled trials have found that intranasal zinc is ineffective in preventing or reducing the duration of the common cold."

In addition to its uncertain efficacy, increasing evidence indicates that intranasal zinc therapy may be linked to potentially permanent reduction of (hyposmia) or loss of (anosmia) the sense of smell, the authors note. Terence M. Davidson, M.D., and Wendy M. Smith, M.D., of University of California, San Diego, School of Medicine and Veterans Affairs San Diego Healthcare System, applied the Bradford Hill criteria—an approach for assessing whether an environmental exposure is likely to cause a disease—to intranasal zinc gluconate therapy and olfactory dysfunction using published, peer-reviewed medical literature and clinical reports from 25 patients treated at a nasal dysfunction clinic.

Each of the nine Bradford Hill criteria—strength of association, consistency, specificity, temporality or timing, biological gradient (dose-response), biological plausibility, biological coherence, experimental evidence and analogy—was evaluated and supported the hypothesis that intranasal zinc could be a cause of anosmia. For instance, in terms of temporality, affected patients report experiencing a burning sensation immediately after using zinc medication and then report perceiving a loss of sense of smell within minutes to hours.

Regarding coherence—the principle that cause-and-effect interpretations of data do not conflict with what is generally known about the disease—the authors note that in many causes no other intervention was used. "Consider those individuals who used intranasal zinc when they were otherwise healthy and had no other reason to become anosmic," they write. In several cases, "the sole intervention was the nasal zinc. The differential diagnosis reveals no alternate cause; therefore, the probable explanation for the smell loss is chemical injury due to the use of intranasal zinc."

Finally, when discussing analogy, the authors note that other airborne and topical compounds, such as ammonia and chlorine, have been shown to cause anosmia.

Given their findings suggesting that intranasal zinc can cause anosmia, the authors recommend that "Increased Food and Drug Administration oversight of homeopathic medications is needed to monitor the safety of these popular remedies."

More information: Arch Otolaryngol Head Neck Surg. 2010;136[7]:673-676.