Respiratory infections

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Menthol and its effects in respiratory system

Jana Plevkova[1], Tomas Buday[1], Natália Kavalčíková-Bogdáňová[1], Miroslav Šteruský[1]
[1]Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Department of Pathophysiology and Division of Neuroscience , Martin, Slovakia

Menthol and other aromatic compounds have been widely used in the symptomatic treatment of upper respiratory tract infections/diseases as a component of many over-the-counter common cold and cough remedies.

Inhalation of menthol reduces breathlessness and increases nasal patency by its interaction with so called cold/flow receptors in the nasal mucosa, however it does not influence objectively measure nasal airway resistance. Menthol also supresses the cough reflex, interferes with the mucus production and possesses antimicrobial activity.

The molecular action of menthol is mediated via "menthol" receptor – which is a member of the superfamily of transient receptor potential channels –TRPM8 ion channel activated by innocuous could temperatures and natural ligands with cooling effect. Expression pattern of the TRPM8 channel in the respiratory system determines the effect of administered menthol and similar substances. The work summarizes and presents our findings obtained in animal models and human volunteers with modelled cough hypersensitivity and pathological processes in the upper airways.

Mentholated over-the-counter remedies are safe and effective in symptom relieve and their use can avoid over prescription of antibiotics in every case of upper respiratory tract infection, which is an economic burden and also increases bacterial resistance.