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Short Communication

Cough in Children - The Most Common Problem at Outpatient Pediatric Clinic

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Cough is a physiological mechanism that allows protection from inhalation of airborne irritant materials and clearing secretions from the airways.1 It also represents a very common respiratory symptom, a nonspecific clinical sign possibly due to a number of diseases (bronchial asthma, allergic disorders, postnasal drip, upper airway infections (UAIs), neoplastic diseases, tracheomalacia, gastroesophageal reflux, environmental pollution, and psychological disturbances) and some drugs (i.e. ACE inhibitors and β-blockers) [1-3].

Cough can be either acute or chronic. Chronic cough is the one that lasts when for at least 8 weeks. If cough episodes are due to simple cold, they usually tend to resolve spontaneously within 4-5 days in the vast majority of cases. Cough due to upper respiratory tract infection (URI) or cough without preceding infection is one of the most frequent complaints encountered by family physicians and pediatric providers [4,5].

There is almost no day without a child being examined for upper respiratory tract infection and cough. These cough episodes also cause substantial school absenteeism, which in turn can affect parents' working activities [6]. Cough more than other symptoms disrupt the sick child and particularly the family from sleeping and might result in frustration among parents. In most cases antibiotics and antiviral drugs are proved to be not effective in cough resolving. These cough episodes also cause substantial school absenteeism, which in turn can affect parents' working activities [6].

More than half of children younger than 12 years of age use 1 or more products in a given week. Over-the-counter (OTC) products are most often prescribed products, including antitussives, expectorants, antihistamines, decongestants, and antipyretics such as acetaminophen [8-11].

Some of the most commonly used OTC medications for cough in children are dextromethorphan (nonselective serotonin reuptake inhibitor and a σ1-receptor agonist) and diphenhydramine (first-generation antihistamine) [12]. Both medications were found not to be superior to placebo in providing nocturnal symptom relief for children with cough and sleep difficulty [12].

In the past, codeine has been frequently prescribed due to it suppression effect on central nervous system. Both lack of strong evidence of its effectiveness and lots of potential side effects lead to the prohibition of using this substance for treating cough in children. On the other side more recent studies have showed the effectiveness of herbal products in cough treating [13].

Some alternative preparations including herbal products have been trialed in recent years [14].

Nature is a treasury of herbs with healing properties. These herbs used to be a part of traditional medicine from ancient times. During modern times, healing properties of herbs have been proven by clinical studies, and their effect on various conditions and diseases established. Today, more than 10 000 herbs are in use in medicine, and there are on-going researches of their healing properties all over the world. Herbs contain many active ingredients and may have several actions to support the body's health, while many of them maintain

a gentle adverse effect profile. Therapeutic value of herbal remedies is based on the connection between the chemical structure of active substances in herbs and their pharmacological effects on the body. Complexity of chemical composition, and ingredients ranging from 2 - 3 and sometimes even 30 - 40 identified elements in some herbal species, can explain therapeutic effect of the same plant for different conditions. Herbal remedies can be used in treatment or prevention of disease, as addition to main therapy as well as a main drug, or to stimulate or strengthen the body's normal functions. Nowadays, phytotherapy is complementing the concept of modern therapy, working synergistically to restore health. There is no area of health issues so far where phytotherapy does not fit well with other health systems. In south-east European region, use of herbal preparations in therapy or as a prophylactic agent has a long and rich tradition. The growing use of medicinal plants by the population is due to its low cost, easy access and history of traditional use. Conditions like cough, flu, or common cold with respiratory symptoms can successfully be treated with herbal remedies, especially in children. In pediatric population, the largest number of respiratory episodes accompanied by coughing are of viral origin. Usually, cough in this age group does not require antibiotics, so use of herbal remedies for symptomatic therapy can be of great help. Remedies with herbal extracts in them have a positive effect on the upper respiratory tract due to active ingredients such as phlegm, saponosides, and essential oils. Herbs that are most commonly used as cough remedies are: marchmallow (root), chamomile (blossom), basil (leaf) and rosehip (fruit). Marshmallow root is well known for its' high mucilaginous contents and is traditionally used for soothing dry and irritant cough. Mucus provides protection of upper respiratory tract mucous membranes by coating prevents irritation and eases coughing [10]. Rosehip fruit is the best source of vitamin C, that together with other active substances like flavonoids and anthocyanins contribute to its' anti-inflammatory and antioxidant effect [16,17].

Chamomile blossom exhibits anti-inflammatory and antibacterial effect when introduced to cough syrup formulations. This helps soothe muscles in respiratory tract, relieving the "tickle" in the throat, and it promotes restful sleep [18]. Basil is also often used in cough syrups due to an ingredient eugenol, which is the main component of basil essential oil. It shows anti-inflammatory effect which contributes to soothing the cough [19]. Although, honey is not of herbal origin, it is often used in phytotherapy as an adjuvant in various formulations. Honey acts as a demulcent, with a high viscosity and stickiness that does an incredible job of coating and soothing irritated mucous membranes. Due to these effects, honey represents a common component in cough syrups [20]. Regardless of their specific effects when applied singularly, traditional use have shown that a combination of certain components can be the optimal solution. In optimal combinations, these herbal formulations show synergistic effect. Different herbal ingredient will target a specific kind of cough, so various conditions could be covered using a mixture. As a result of optimal formulations, cough can be eased faster and easier, which can positively influence overall state of the patient, as well as the main cause of the cough [21].

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