

Determination of Antimicrobial and Antioxidant Activity of Syrups Used for Upper Respiratory Tract Infections in Children

This article is an interdisciplinary study. It was to reveal that syrups with coughing and septone and alkali used especially after the colds of children are in two groups as chemical and plant-added syrups. The presence of antioxidant antimicrobial and properties of these syrups, which are widely used, and the effect of herbal syrups between chemical syrups. It provides practical in

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Abstract

The aim was to research the antimicrobial effects against clinically significant bacterial and fungal organisms and antioxidant activities of some syrups sold with and without prescriptions and commonly used for upper respiratory tract infections in children. The antimicrobial efficacy of 10 syrups, with five chemical-based and five herbal-based, against nine bacteria and one yeast species was tested with the disc diffusion method and data in the research were statistically analyzed. Additionally, the antioxidant efficacy of the syrups was researched with total phenolic content in addition to tests based on different methods. This study found herbal-based syrups had mean activity (11 mm) that was higher compared to chemical-based syrups (9.42 mm) according to results obtained by measuring the inhibition diameters. Among all syrups, the syrup containing Pelargonium sidoides root extract had highest activity against all microorganisms. While the total phenolic content of a syrup with chemical origin was higher than that of all other syrups, the antioxidant activity of another syrup containing many herbal extracts at the same time was considerably higher as a result of 2,2-diphenyl-1-picryl-hydrazyl-hydrate (DPPH) assay. Herbal-based syrups have stronger antimicrobial efficacy compared to chemical-based syrups. The strongest antimicrobial activity was in syrups with herbal-based active material of Pelargonium sidoides root extract and thyme fluid extract. The antioxidant activities of herbal syrups containing extracts of different parts of herbal species such as thyme, licorice root, echinacea, ginger, African geranium, barberry, and acerola were found to be more effective according to all three methods tested.

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