



## Use of Herbal Medicinal Products among Children

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### ABSTRACT

The use of herbal medicinal products for the treatment and prevention of diseases has a long tradition over the world. The herbal medicinal products are defined as exclusively herbal active substances-contained medicinal products which used for prevention or treatment of disease. Because of its process, it chemically different defined substances in several aspects; mostly because they consist of complex multi-component mixtures which from the extraction of plant parts such as roots and leaves. Many substances could be used for relieving clinical symptoms among children. The perception that “natural” products are harmless is still dominant in many consumers. Therefore, adverse effects of herb medicines are rarely reported by patients who have taken them.<sup>4</sup> This review will discuss about use of herbal medicinal products and what is the impact for using this in children.

### 1. Introduction

Herbal medicine as a complementary and alternative medicine (CAM) is regarded for a country with highly developed health care systems, thus less common in clinical settings, but has become increasingly popular in recent years. In this context, herbal medicinal products are defined as exclusively herbal active substances-contained medicinal products used for prevention or treatment of disease. Because of its process, it chemically different defined substances in several aspects; mostly because they consist of complex multi-component mixtures which from the extraction of plant parts such as roots and leaves. Despite their many uses, but many herbal medicinal products which used have not performed complex scientific analysis via clinical trials for their safety and efficacy. There are one of the big problems for this is that fact of the majority of herbal active

substances, therapeutic activity cannot be related to scientifically identified, chemically defined ingredients, which worsening conventional clinical studies.<sup>1,2</sup>

The herbal medicinal products for pediatric use have been examined and investigated in previous studies mostly under the CAM umbrella. However, a differentiation according to the type of CAM (herbal medicine, homeopathy, manual therapies, etc.) is necessary as various types of CAM exhibit diverse characteristics and may have a different effect on the users' health. Furthermore, users' profiles could vary according to the type of CAM itself.<sup>3</sup>

Asia, as the house of herbal medicine, used herbal medicine as Complementary and alternative medicine (CAM). Traditional Chinese (Korean) herbal medicine is a substantial component of the medical industry in

Korea, and many Koreans have a positive or overcredulous attitude toward traditional Chinese (Korean) herbal medicine.<sup>4</sup> In response to the rising use of herbal medicine, the Indonesian government has issued the regulation which classifies the marketed herbal products into 3 groups based on their data in efficacy and safety. They are herbal (jamu), standardized herbal, known as obat herbal terstandar (OHT), and clinically tested herbal medicine, known as fitofarmaka. Jamu has been used empirically for decades without any experimental data.<sup>5</sup>

The perception that “natural” products are harmless is still dominant in many consumers. Therefore, adverse effects of herb medicines are rarely reported by patients who have taken them.<sup>4</sup> This review will discuss about use of herbal medicinal products and what is the impact for using this in children.

### **Herbal medicinal products**

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Phytotherapy is the use of herbal medicines for the prophylaxis and treatment of diseases. Different from others which more traditional approaches, phytotherapy is a scientifically proven medical practice, such as herbal treatment which relies on empirical assessment of medicinal plants and which is often related to traditional knowledge. Phytotherapy is a part of pharmacology as a scientifically proven prophylaxis and treatment with phyto products derived from medicinal plants or parts thereof.<sup>6</sup>

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### **The use of herbal medicinal products among children**

Common cold is one of the most common diseases over the world. Adults may suffer from a cold of 2 to 5 times a year, whereas in children this number is 7 to 10 times. Common cold is a precondition for significant economic and social difficulties. It is because of the high prevalence rate, especially among children. Symptoms of common cold is so fast, in children typically reach a peak shortly after the onset of the disease. The duration of symptoms is from 7 to 10 days, and may vary from 2 to 14 days.<sup>7,8</sup> Making ginger herbs with the addition of ginger, tamarind, palm sugar, pandan leaves and cumin, both for children and the elderly because it can cure complaints of dizziness, nausea, and relieve symptoms of colds.<sup>9</sup>

Several substances of plant from many different healing plants against cold and flu-like syndrome have been used in Europe: linden flowers (*Tilia* spp. L.); black elderberries berries and flowers (*Sambucus nigra* L.); echinacea stems and roots (*Echinacea purpurea* (L.) Moench); rosehip

(*Rosa canina* L.); berries (*Ribes nigrum* L.), sea buckthorn (*Hippophae rhamnoides* L.) lemon juice and others.<sup>7,8</sup>

Herbal medicines can be administered as the treatment of specific conditions such as: gastro-esophageal reflux, functional disorders – dyspepsia, irritable bowel syndrome; inflammatory conditions of the upper tract – aphthous ulcers, oesophagitis, gastritis; chronic gastrointestinal infections and dysbiosis; constipation, not only a non-specific supplement to restore physiological functions.<sup>7</sup>

A study showed that there was no significant difference in success rates in the use of lactulose, anthraquinone (*Cassia senna* L.) or hydrolyzed guar (*Cyamopsis tetragonoloba* (L.) Taub.) In a review article medicinal plants are indicated: *Plantago ovata* *Ficus carica*; *Vitis vinifera*; *Rosa x damascena* Mill; *Olea europea*; *Ricinus communis*; which are used to prevent and treat constipation in pediatric patients.<sup>10,11</sup>

Many other healthy children may experience chronic functional pain, including chronic daily headaches, abdominal pain, and limb pain. Functional abdominal pain can be relieved by *Mentha piperita* L. (*M. aetheroleum*); *Fumaria officinalis* L. (*Fumaria extract*).<sup>12</sup>

The enemas were frequently contained different species of melegueta pepper (*Aframomum* spp.) or ground red peppers (*Capsicum annuum*) mixed with water. These mixtures were administered to newborn infants to excrete the meconium, as well as to older infants for daily cleanses and constipation relief.<sup>13</sup>

### **Disadvantages of use of medicinal products**

The variability in herbal product ingredients makes the actual dose of active ingredients being consumed is often variable, unpredictable, or simply unknown. It is so harmful. Furthermore, when compared with adults, children may be particularly susceptible to the effects of such dosage variations by virtue of their smaller size and different capacity for detoxifying chemicals. Finally, material collector seeking herbal remedies may mistakenly collect one plant confusing it for another. This can be a lethal error if, for example,

water hemlock is harvested and eaten after mistakenly being identified as wild ginseng.<sup>14</sup>

The safety of herbal products may be related to their interactions with other herbs and drugs, the mixtures of active chemicals that they contain; contaminants, or adulterants; or their inherent toxicity. Plants have complex mixtures of terpenes, alkaloids, saponins, and other chemicals, increasing the risk of adverse reactions to any one of them or to the additive or synergistic effects of chemical interactions. For example, >100 chemicals have been identified in tea tree oil. Active ingredients in herbs and dietary supplements can cause unexpected reactions when used with other herbs or medications. Effects on the distribution, metabolism, or excretion of drugs may be pronounced and may lead to drug toxicity. For example, sassafras reportedly inhibits microsomal enzymes and can increase the half-life of drugs metabolized by the liver.<sup>14</sup>

The toxicity of herbal medicines may be due to toxic constituents of the herbal ingredients intrinsically. Viscotoxins, one of the examples of this toxin, which are constituents of mistletoe and are both cytotoxic and cardiotoxic. Other examples include cyanogenetic glycosides which are present in the kernels of a number of fruits. Gastric hydrolysis of these compounds results in the release of hydrogen cyanide quantitatively. Other important mechanisms associated with the toxicity of herbal medicines include allergic reactions and contamination by heavy metals.<sup>15</sup>

### **2. Conclusion**

The herbal medicinal products are defined as exclusively herbal active substances-contained medicinal products/ Medicinal plants and herbal remedies can be used to treat and prevent mild to moderate illnesses. Discontent with conventional medicine is one of the preconditions for healthcare professionals – physicians and pharmacists, as well as parents to prefer the use of phytotherapeutic agents. Therefore, it is necessary to provide adequate information on the safety and efficacy of herbal medicines. There is necessary to further study about

complex scientific analysis via clinical trials regarding safety and efficacy.

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