

Editorial

Medicinal Herbs: Naturally Safe?

The argument that ‘it is natural, it must be safe’ has been used innumerable times to justify the lack of clinical trials on the efficacy and safety of medicinal herbs. Herbs have been a central part of medical care for millennia: in 1550 BC in Egypt they appear in the Ebers Papyrus and their use has also been documented in the Greek Corpus Hippocraticum in the 16th Century BC. The historical uses in Asian countries and in India also richly illustrate the human experimentation with plants to treat disease, and a number of major discoveries, such as the isolation of morphine from poppies, and digitalis from foxglove, have withstood the test of time, and in some cases become part of modern medical practice. But, what is the safety cost of this human experimentation with medicinal herbs?

We attribute to Theophrastus Aureolus Bombastus von Hohenheim (who, not surprisingly, shortened his name to Paracelsus), the tenet that ‘the dose determines the poison’. He was also a propagator of the use of herbs for medicinal purposes, being one of the first Europeans (1500 AD) to put chemistry to the service of medicine, instead of just for the purpose of alchemy. The description of his contributions according to Stedman’s Medical Dictionary mimics some of the current attitudes in the scientific communities about medicinal herbs. They write that, ‘his teachings were a strange mixture of conceit, showmanship, senseless bombast, mysticism, astrology and sound medical wisdom’.

Sound medical wisdom, as we currently understand it, depends upon unbiased scientific studies that meet the necessary criteria of blindness, comparison with placebo, and randomization. This extent of medical wisdom regarding the efficacy of medicinal herbs is still modest at best, as demonstrated in a recent International Meeting on the Safety and Efficacy of Medicinal Herbs at which the existing knowledge base for determining safety and efficacy of the use of eight herbs in man was examined¹.

At this meeting, Dr Varro Tyler suggested that the European principle ‘absolute proof of safety, reasonable

proof of efficacy’ be adopted in the United States. This strategy emphasizes the critical cost–benefit equation – *safety first*. And although many believe that proof of safety is nearly impossible, the degree to which safety has even been addressed is of great concern. There are many dimensions of safety – safe for whom, safe in what dose, safe in what frequency of consumption, safe before the onset of a condition, safe after the physiology and balance is significantly altered by that condition.

The nutrition community in the US, particularly in light of the availability of and high enthusiasm for high dose nutrient supplements, is struggling with this concept for nutrients – what the upper tolerable and recommended limits should be. The National Academy of Sciences, through its Food and Nutrition Board, is currently developing such upper tolerable limits (ULs) for individual nutrients. Medicinal herbs are similar to plant foods in that they reflect ingested leaves, stems or roots of plants. Yet, even as they have been selected for their activities, as so clearly outlined in the review article of Dr Stickel and Dr Seitz in this edition of the journal, there are numerous, serious, and in part irreversible, risks associated with the consumption of certain plants valued for their medicinal properties.

Medicinal herbs are becoming increasingly popular in the US and have been accepted as important components of widely accepted alternative medicine procedures in Europe and Asian countries. There is little motivation to legislate these products and there are few economic motives to invest in research on these non-patentable products. Therefore it is particularly important that we, as public health professionals, educate ourselves and the populace about both the sound knowledge base on the efficacy of as well as the dangers related to the use of medicinal herbs. This article is a contribution to that education process, and provides an excellent overview of the more than two dozen plant products known to induce serious and in many instances irreversible liver damage in man.

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¹The Proceedings of this International Conference on the Efficacy and Safety of Medicinal Herbs will be published in the fall of 2000 in *Public Health Nutrition*.