



MEDICINAL PLANT POISONING AND HERB-DRUG INTERACTION: A REVIEW

Sunil Mistry^{*1}, Santosh Kumar Singh², Ankita Patel², Swaroop Patel²

¹Apex Institute of Pharmacy, Samaspur, Chunar, Mirzapur, Uttar Pradesh, India

²Apex Hospital, DLW Varanasi, Uttar Pradesh, India

*Corresponding author: mistrysunil80@gmail.com

ABSTRACT

It is estimated that three quarters of the earth populace rely on herbal and conventional medicine as an origin for principal health care. Therefore, it is one of the most important and challenging errands for scientists working in drug research to examine the effectiveness of herbal medicine, to divide constructive from adverse effects, to recognize active ideology in medicinal plants and to ban poisonous plants or contaminations from herbal mixtures. In the present review, some problems are critically discussed. Botanical misidentification or mislabeling of plant material can play a role for toxic reactions in humans. Some plant descriptions in traditional herbal medicine (e.g. traditional Chinese medicine) have changed over time, which may lead to unintended intoxication by using incorrect plants. A difficulty is also the contamination of herbals with microorganisms, fungal toxins such as aflatoxin, with pesticides and heavy metals. Unprincipled processing, which differs from safe traditional preparation represents one more potential source for herbal poisoning. Unwanted effects of herbal products may also expand by the interaction of herbs with conventional drugs upon associated intake. The art of herbal medicine is to divide pharmacologically and therapeutically precious herbal drugs from harmful and toxic ones and to expand combinations of medicinal plants as safe and efficient herbal remedies. Standardization and strict control measures are essential to monitor sustainable high quality of herbal products and to exclude contaminations that badly affect patients consuming herbal medicine.

Keywords: Medicinal plant, toxicity, Herb-drug interaction, Herb-herb interaction, Traditional medicines.

1. INTRODUCTION

The herb drug interaction topic is so vast that a full volume of a book could be dedicated to it. Use of herbal products for preventive and therapeutic purposes has increased tremendously over the last two decades. More than 130 distinct chemical substances which are derived from plants are in use as drugs. Production of modern pharmaceutical compounds requires adherence to good manufacturing practice (GMP). Rigorous safety and efficacy studies are essential before getting approval from regulation bodies for human use. The same is not true with herbal drugs and supplements however this system is based more on traditional knowledge. Herbal medicines, often dispensed in a crude form of their extracts, form the mainstay of health care for a more than 50% of the population in developing countries due to either non-availability of modern medical care, its cost, or lack of health care knowledge [1]. A large portion of the population in sub-Saharan Africa depends on traditional medicine for its primary health care, whilst 50 % of the Chinese population uses herbal therapy [2]. The

global annual turnover in herbal medicines is estimated at US\$ 60 billion, representing approximately 20% of the overall drug market [3]. CAMs are perceived to be innocuous and safe, therefore there is ignorance of side effects or potential risks of interactions with other drug substances. Chemical compounds, present in crude herbs or their extracts, are responsible for their pharmacological actions. For example, Ginseng (*Panaxnoto ginseng*, family: Araliaceae), which is widely used in China for the treatment of various diseases like cardiovascular, neuropathy or blood disorders, is believed to be safe, though some rare side effects such as anxiety, insomnia, or pain have been reported. Also, a large number of herbal-drug interactions have been reported, e.g. ginkgo products causing bleeding or seizures [4]. The kidney is an essential organ when it comes to detoxification of the body. A large number of substances are excreted through the kidney making it vulnerable to toxins. A number of therapeutic drugs can adversely affect the kidney resulting in acute kidney injury (AKI), nephritic syndrome and chronic interstitial nephritis.