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Incorrect Uses of Herbal Medicine and Study of Consequences: A Review

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Background: A type of medicine that uses herbs, part of herbs or products that contain active ingredients of plant is known as herbal medicine. Due to high demand and less availability of crude authentic drugs, practice of substitution and adulterations are increasing day by day and use of controversial medicinal plants has been reached by considerable percentage in herbal industry. With this background several number of cases of adverse effects due to misuse of herbal materials have been recorded worldwide.

Objectives: To identify the incidents due to incorrect uses of herbal medicine and to determine the causes for misuses and minimize them.

Methods: This review was conducted in accordance with the preferred reporting items for systematic reviews and electronic bibliographic databases such as PubMed and Allied & Complementary Medicine Database. Clinical reports, short case studies, reviews, case series, and editorials were critically assessed which are published in last decades. This was done through 21 reviewed articles and clinical reports, short case studies and case series in index journals which are published in last thirty years. The articles which published before 1990 and other peer reviewed articles were excluded.

Results: In early 1993, *Aristolochia sp.*, had been mistakenly used instead of *Stephania tetrandra*. Nephrotoxicity case had been reported due to consumption of *Aristolochia pistolochia* by the patient without under medical supervision. Many cases were reported in India, due to misleading of nomenclature. Similarly, there are 08 major causes of incorrect uses of herbal medicine have been identified as incorrect identification of medicinal plants, excessive usage of herbal medicine, use of incorrect plant as substitutes, practice of harmful adulterations for commercial purpose, non-identified chemical constituents of raw materials, self-prescribed herbal medicine without medical supervision, unethical marketing strategies through the media and lack of awareness about "herb – drug" interactions.

Conclusions: Use of parallel advanced knowledge systems such as Botany, Phyto-chemistry, Pharmacognosy, Toxicology, Pharmacovigilance and monographs for the identification of correct medicinal plants and strengthening policies and regulation in standardization of herbal pharmaceuticals could be assisted to minimize the misuses of herbal medicine.

Keywords: *Controversy, Herb-drug interactions, Herbal medicine*