

Why to be Careful on Herbals in Aged Population?

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ABSTRACT

Aging individuals experience various changes in their physiology, biology, etc aspects and they need specific precautions not to be open to any risk (s) arising from such changes. One of the popular issues among aged people has been the increase in the use of herbal products recently. There are “scientifically proved expected” risks of herbal use.

The fact that the frequency of herbal use increases in aged population in which different metabolic issues occur due to aging itself as well as polypharmacy, and other influencing factors, such risks need to be discussed in more detail.

In this brief paper, frequency and major risks of herbal as well as basic recommendations for the future have been highlighted.

Key words: Aged, Herbal, Risk

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Herbal use in aged population has increased since the last decades and this change brought with it a number of problems to be clarified and solved. In this brief paper, frequency and major risks of herbal as well as basic recommendations for the future have been highlighted.

Steinberg et al mentioned the high frequency of use of herbal medicine among elderly and frequency varies between 15% and 50% according to the different data sets [1]. Two or more than two herbal use, named as polyherbacy, is also known to be a prevalent issue in old ages [2].

Nur mentioned the most frequently used herbals as mint, rosehip and lemon for all ages in a study conducted in the Middle Anatolia with 3876 adults [3]. Soner et al. conducted a study at a university hospital setting among 18 years of age and older patients in Konya province and found that the most frequently used three herbals were *Camellia sinensis* (green tea), *Rosmarinus officinalis* (rosemary) and *Zingiber officinale* (ginger) [4].

The major reasons for this up going trend is known to be the increase in both chronic disease frequency and comorbidities among older population [5]. Another reason may be health professionals' recommendations of herbals to their patients. For example, Andreas et al. found that almost half

of the medical doctors recommended ginkgo biloba which is used in preventing cognitive decline and dementia to their elderly patients [6].

There are various risks reported due to herbal use among elderly.

Products of ginkgo biloba, St. John's worth, ginseng, kava, saw palmetto, garlic and echinacea products are among frequently used herbals in older ages. As Aşçı et al declared, risks of herbal use can be classified as toxicity, pesticide remains, biological and heavy metal contamination, addition of hazardous chemicals, herb metabolites and toxins. Herbal toxicity can be caused by direct toxicity (cardiac, pulmonary, renal, hematologic, hepatic, etc.), drug-herbal interactions and herbal adulterant toxicity [7]. Considering the high incidence of comorbidities and polypharmacy in elderly herbal-disease and herbal-drug interactions have a great importance.

Herbal-drug interactions are one of the major risks of herbal use. Herbal-drug interactions can be either in pharmacodynamic or pharmacokinetic nature [8]. As Tovar and Petzel highlighted, pharmacokinetic interactions are alteration in drug absorption, renal clearance alteration, change in plasma protein binding, etc. Hepatic drug metabolism can also be affected. Additive or synergistic influences

Table 1. Rationale why the community uses herbal (s) and basic adverse reactions/drug interactions [12]

Herbal name	Major rationale for its use	Important Adverse reactions / Drug Interactions
Echinacea	Common cold	Central nervous system and cardiovascular system toxicity. Interacts with CYP3A4 substrates.
Ginkgo biloba	Impairments in memory, cognitive speed, inflammation and edema	Bleeding. Interactions especially with: Anti-convulsants, anti-diabetics, buspirone, nifedipine, NSAIDs, SSRIs, trazodone
St. John's wort	Depression	Interactions especially with: benzodiazepines, oral contraceptives, SSRIs, statins
Ginseng	Central nervous system stimulant, cardio-vascular system effects	Hormonal effects, cardiovascular and central nervous system side effects, liver damage, hypoglycemia in diabetes mellitus.

are the basic pharmacodynamic interactions [7].

Various other specific highlights have also been reported for examples of herbal use risks. In a study conducted in Hong Kong by Cheng et al, anticholinergic poisoning has been reported with the most frequent symptom mydriasis (n = 32, 100%) and confusion [9].

Lai et al reported the increased risk of urinary tract cancer associated with Chinese herbs including aristolochic acid [10]. Hepatotoxicity is another very well known risk of herbal use [11].

Physiological changes in elderly especially in hepatic, cardiovascular and renal systems are directly related with the drug/herbal response and toxicity. Changing of activities of drug metabolizing enzymes in liver, cardiac index and renal function require a special attention to the use of drugs and herbals.

In Table 1, selected herbals, rationale why the community uses them and major adverse reactions/drug interactions have been listed.

Basic recommendations for the future:

People' beliefs on herbals as they are "safe" and "natural" make the issue more complicated. The herbal industry has the risk to misuse such beliefs

in order to widen its market all around the world. As very well known, there is sparse of data related with the "safe dose" of the herbals obtained from randomized-controlled-blinded clinical trials and for this very basic and important rationale, all health staff including medical doctors and community should have been careful in using these products.

Knowledge and awareness of the elderly on the use of herbals and their risks should be increased.

The simplest step to minimize adverse effects related to herbal medications seems to simply ask patients about use of herbal products. Health professionals should have updated knowledge on adverse effects of commonly used herbal products.

Updated scientific data using evidence-based medicine should be produced. In this purpose, all related disciplines like medicine, pharmacy, ethics, law, etc. need collaboration.

There is a need to work on updating legal regulation (s) to protect the individuals and community from the "possible" risks of herbal use. According to the *precautionary principle* in public health, all suspected risks causing harm should be accepted as "harmful" until its harmless has been proved scientifically [13].

REFERENCES

- [1] **Stjernberg L, Berglund J, Halling A.** Age and gender effect on the use of herbal medicine products and food supplements among the elderly. *Scandinavian Journal of Primary Health Care* 2006; 24 (1): 50-5.
- [2] **Zyoud SH, Abd-Alhafez AB, Hussein AO, Abu-Shehab IS, Al-Jabi SW, Sweileh WM.** Patterns of use of medications, herbal products and nutritional supplements and polypharmacy associating factors in Palestinian geriatric patients. *Eur Geriatr Med* (2013), <http://dx.doi.org/10.1016/j.eur-ger.2013.11.004> (in press).
- [3] **Nur N.** Knowledge and behaviors related to herbal remedies: A cross-sectional epidemiological study in adults in middle Anatolia, Turkey. *Health & Social Care in the Community* 2010; 18 (4): 389-95.
- [4] **Soner BC, Şahin AS, Şahin TK.** A survey of Turkish hospital patients' use of herbal medicine *Eur J of Integr Med* 2013; 5: 547-52.
- [5] **Aşçı A, Baydar T, Şahin G.** Yaşlılarda herbal preparat kullanımının ve ilaç etkileşmelerinin toksikolojik açıdan değerlendirilmesi. *Turkish Journal of Geriatrics* 2007; 10: 203-14.
- [6] **Franke AG, Heinrich I, Lieb K, Fellgiebel A.** The use of Ginkgo biloba in healthy elderly. *AGE* 2014; 36: 435-44.
- [7] **Tovar RT, Petzel RM.** Herbal toxicity. *Disease a month* 2009; 55: 592-641.
- [8] **Chavez ML, Jordan MA, Chavez PI.** Evidence-based drug-herbal interactions. *Life Sciences* 2006; 78: 2146-57.
- [9] **Cheng KL, Chan YC, Mak TWL, Tse ML, Lau FL.** Chinese herbal medicine-induced anticholinergic poisoning in Hong Kong. *Hong Kong Medical Journal* 2013; 19: 38-41.
- [10] **Lai M, Wang S, Chen P, Chen Y, Wang J.** Population-based case-control study of Chinese herbal products containing aristolochic acid and urinary tract cancer risk. *N Natl Cancer Inst* 2010; 102: 179-86.
- [11] **Navarro VJ.** Herbal and dietary supplement hepatotoxicity. *Semin Liver Dis* 2009; 29: 373.
- [12] **Graham RE, Gandhi TK, Borus J, Seger AJ, Burdick E, Bates DW, Phillips RS, Weingart SN.** Risk of concurrent use of prescription drugs with herbal and dietary supplements in ambulatory care. In: Henricjsen K, Battles JB, Keyes MA, Grady ML, editors. *Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 4: Technology and Medication Safety)*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008; 3-13.
- [13] **Çamur D, Vaizoğlu S.** Çevreye İlişkin Önemli Toplantı ve Belgeler. *TSK Koruyucu Hekimlik Bülteni* 2007; 6: 297-306.

