

HERBAL REMEDIES: USE WITH CAUTION

The information explosion in the science of nutrition very often creates the impression that available information is contradictory. Consequently, it is no longer easy to distinguish between fact, misinformation and fiction. The Division of Human Nutrition, Faculty of Medicine and Health Sciences, Stellenbosch University act as a reliable and independent source of nutrition information.

Herbal preparations are common ingredients in complementary and alternative medications (CAM) and in nutritional supplements. The continuous and worthwhile efforts to improved health and disease prevention together with frequent and, at times, irresponsible exploitation of real, assumed, potential or theoretical benefits claimed to be derived from the use of herbal preparations and other supplements have undoubtedly contributed to the worldwide increased and increasing use of such supplements over the recent years. The increased use of such supplements seems to be occurring despite repeated calls of caution especially in relation to the documented lack of information on the safety of some, if not all, of these products.

The so called ‘natural origin’ or “have been used for years without any harm” approach appears to afford an ill placed trust and false sense of security in the use of these products. The risk for harm to the consumers of these products is further augmented by the current approach to official policy, which considers such products as nutritional supplements in the category of complementary and alternative medications (CAM). This, in itself, implies that such supplements are exempted from rigorous documentation on aspects of long-term safety, and efficacy of the claims which usually accompany their rigorous promotion. It is also of note that any claims made for such supplements are always of a beneficial nature, which they have to be if they are to be sold, with scant or no reference to the potential for harm. The latter of course perpetuates the potentially false sense of security which in turn makes even the mere consideration of harm unlikely, when and if it occurs.

So what is the potential harm?

Emerging knowledge derived from the recent investigation on the safety of such nutritional supplements, led NICUS to express concern and recommend caution on the use of the so called nutritional supplements as part of NICUS’ mandate to communicate new advances and help the public make informed decisions on nutrition related issues. In relation to the current update, the serious

adverse effects of some herbal preparations on the liver (liver toxicity or herb induced liver injury) and other adverse events have been communicated since they have been repeatedly reported in the scientific literature (Table1).

Documented cases of liver toxicity associated with herbal products

Toxic hepatitis (liver toxicity or liver injury) is considered the most common adverse reaction resulting from use of these herbal ingredients. Hepatitis is often caused by either the concomitant consumption of hepatotoxic ingredients such as acetaminophen and non-steroidal anti-inflammatory agents or by hepatotoxicity of herbal ingredients themselves. A literature search was performed to identify published case reports, spontaneous case reports, case series and review articles regarding herbal hepatotoxicity. The authors identified a total of 185 publications and the results show 60 different herbs, herbal drugs and herbal supplements with reported potential hepatotoxicity. It is however very difficult to prove causality. There may have been more adverse events, but the current surveillance system is poor and reports of such incidents are not compulsory. Most unsubstantiated products use polypharmacy (i.e. a combination of ingredients). Yet, actual clinical testing of the efficacy and safety of these combinations of ingredients has not taken place. In varying degrees, data are inappropriate or lacking for the type of herbal product, indication and duration of intake, daily dose, appearance of first symptoms and liver value increase, de challenge details, risk factors, co-medication, previous and concomitant general diseases and liver diseases, and exclusion of alternative diagnoses.

Based on stringent causality assessment methods and/or positive re-exposure tests, causality for liver toxicity or injury was found highly probable or probable for Ayurvedic herbs, Chaparral, Chinese herbal mixture, Germander, Greater Celandine, green tea, few Herbalife products (*Solidago gigantea*, *Ilex paraguariensis*, *Petroselinum crispum*, *Garcinia cambogia*, *Spiraea*, *Matricaria chamomilla*, *Liquiritia*, *Foeniculum amare*, *Humulus lupulus*, Chromium and numerous other ingredients), Jin Bu Huan, Kava, Ma Huang, Mistletoe, Senna, Syo Saiko To and Venencapsan. In many other publications, however, causality was not properly evaluated by a liver-specific and for hepatotoxicity-validated causality assessment method such as the scale of CIOMS (Council for International Organizations of Medical Sciences). In the absence of a re-exposure, with a sophisticated causality assessment a probable causality may be established, as shown for Ayurvedic herbs. Causality was unlikely for *Actaea cimicifuga*, *Pelargonium sidoides* and *Hypericum perforatum*, synonym for St John's Wort, because hepatotoxicity was likely caused by comedicated pegylated interferon- α .

The table presents details of herbal hepatotoxicity, and selected other reported adverse events which can be used in suspected cases.

Table1. Reported adverse events associated with herbal products or ingredients

Ingredient and/or botanical name	Possible adverse events
Ayurvedic herbs (<i>Psoralea corylifolia</i> , <i>Acacia catechu</i> , <i>Eclipta alba</i> or <i>Bacopa monnieri</i> , <i>Vetivexia zizanioidis</i>)	Liver toxicity or injury
Chaparral (<i>Larrea tridentata</i> , <i>Larrea divariatica</i>)	
Chinese herbal mixture (Unknown or up to 12 ingredients)	
Germander (<i>Teucrium chamaedrys</i> , <i>Teucrium polium</i>)	
Greater Celandine (<i>Chelidonium majus</i> , also <i>Lycopodium similiaplex</i>)	
Green tea (<i>Camellia sinensis</i>)	
Herbalife products (<i>Solidago gigantea</i> , <i>Ilex paraguariensis</i> , <i>Petroselinum crispum</i> , <i>Garcinia cambogia</i> , <i>Spiraea</i> , <i>Matricaria chamomilla</i> , <i>Liquiritia</i> , <i>Foeniculum amare</i> , <i>Humulus lupulus</i> , <i>Chromium</i> and numerous other ingredients)	
Jin Bu Huan (<i>Lycopodium serratum</i> , <i>Stephania species</i> , <i>Corydalis species</i>)	
Kava (<i>Piper methysticum</i>)	
Ma Huang (<i>Ephedra species</i>)	
Mistletoe (<i>Viscum album</i>)	
Senna (<i>Cassia angustifolia</i>)	
Syo Saiko To (<i>Bupleurum falcatum</i> , <i>Pinellia tuber</i> <i>Zingiber officinale</i> , Ginseng, <i>Scutellaria</i> , <i>Zizyphus jujuba</i> , <i>Glycyrrhiza glabra</i>)	
Venencapsan (<i>Aesculus hippocastanum</i> , <i>Chelidonium majus</i> , <i>Melilotus officinalis</i> , Milfoil, <i>Silybum Adans.</i> , <i>Taraxacum officinale</i>)	
<i>Citrus aurantium</i>	
Gotu kola	Nausea, gastrointestinal upset. There have been 3 reported cases of hepatotoxicity associated with the intake of Gotu kola, dosage unknown.

Guarana	High dosages can cause gastric irritation, nausea, vomiting, restlessness, insomnia, tachycardia, tremors and chest pains.
Cascara sagrada	Mild gastrointestinal irritation. Long term intake may induce hypokalaemia, muscle weakness, cachexia and disturbed heart function .
L'carnitine	Gastrointestinal disturbances such as abdominal cramps, diarrhoea, nausea and vomiting. As well as heartburn, gastritis, body odour and seizures.
Pyruvate	Gastric distress.
Willow bark (<i>salicylates</i>)	Gastrointestinal irritation. In people who are allergic to aspirin, it can cause allergic reaction such as itching, as well as severe reactions such as anaphylaxis.

In conclusion, the current available evidence raising concerns on the safety of selected herbal products should create increased awareness among practicing physicians, pharmacists, dietitians and the general public that some of these so called nutritional supplements should be used with caution, if at all. Nutritional supplements are frequently considered to be harmless but indiscriminate use of unlabelled ingredients may lead to significant adverse reactions.

Furthermore, the findings of these studies underscore again the pressing need for a change in the regulations governing nutritional supplements and natural remedies so as to necessitate ingredient-listing, toxicological testing, and mandatory reporting of all adverse events. In the meantime and as a guideline, the approach as to whether one should consume these supplements or not must be “simply” based on the principles of risk and benefit. In the absence of benefit the risk is too high to take certainly in financial, and, potentially, in life terms.

For further, personalized and more detailed information, please contact a dietitian registered with the Health Professions Council of South Africa.

References from the scientific literature used to compile this document are available on request.

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