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AYUSH ADVIOSRY ON GUDUCHI

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Recently Ministry of AYUSH has released an advisory regarding question mark on safety of guduchi (*Tinospora cordifolia*). Guduchi finds wide use in various AYUSH systems of medicine. Several formulations based on Guduchi are used in Ayurvedic system of medicine. Giloyasatva (extract based on the plant), Giloyaghan vati (tablet based on the pplant), Guduchyadi Taila (medicated oil), Amritsarishta (fermented product), and Guduchyadi churana (compound powder), are well known formulations mentioned in Ayurvedic Formulary of India (AFI) and books related to *Dravyaguna*.

Expressed juice or preserved juice of guduchi is also employed by patients. Several companies have introduced juice of guduchi in the market and making exaggerated medical claims. Preserved juice of guduchi in combination with other herbs is available in the market for various medical purposes. What is scientific rationale of these preserved juices is hard to explain. Guduchi based preserved juices should also be checked for species check in finished formulations.

During COVID-19 pandemic, Guduchi was widely advocated by Ministry of AYUSH as immunomodulator. Giloyaghan vati (tablet based on extract) also known as Sanshamni vati was sold by chemists on large scale for the purpose of boosting the immunity in COVID patients. Formulations based on guduchi were included in guidelines issued by Ministry of AYUSH for the management of mild to moderate symptoms of COVID 19. Ministry of AYUSH in collaboration with CSIR is studying Guduchi+Pippali combination as an option to treat COVID 19 illness.

Advisory by Ministry of AYUSH was issued on safety concerns on use of Guduchi (*Tinospora cordifolia*) that were published in social media and in some scientific journals. This advisory is being issued to confirm that Guduchi (*Tinospora cordifolia*) is safe to use but some similar looking plants like *Tinospora crispa* may be harmful. Guduchi is used in therapeutics since long in AYUSH systems. This advisory was published don the official website of Ministry of AYUSH.

In texts related to Ayurvedic Materia Medica no data is available with respect to ill effects or side effects associated with Guduchi or Guduchi based formulations. Guduchi is mentioned in Bhavprakash Nighantu, Dhanwantry Nighantu, Madanpal Nihantu, Raj Nigahntu, Materia Medica by Khory and Khory, Materia Medica by Chopra, Ayurvedic Pharmacopoeia of India have not mentioned any toxic aspect of Guduchi. Similarly, Ayurvedic Formulary of India has not mentioned toxicity associated with formulations based on Guduchi. In this regard, Essential Drug List of Ayurveda can be a handy work not only for manufacturers but patients and practitioner as well.

May be the concept of acute/sub-acute/chronic toxicity studies was not established when therapeutic use of Guduchi was initiated. Pharmacovigilance is part and parcel of Ayurvedic practice and adverse drug reporting is also . Central and peripheral pharmacovigilance centers have been established and any information related to toxicity is immediately circulated.

Advisory by Ministry of AYUSH with respect to safety concern on use of Guduchi published in social media and in some scientific journals has little impact but such type of happenings invite unnecessary controversies. Formulations (classical or proprietary) based on Guduchi are widely manufactured and sales can be badly affected if such semi-processed information is widely circulated. Further, clinical practitioner using formulations based on Guduchi losses confidence for future use in clinical practice.

In this regard, the information on dosage form of Guduchi utilized in studies published in some scientific journals is very significant. Crude drug, decoction, extract, standardized extract, which form of dosage form of Guduchi was associated with safety concerns on use of Guduchi published in social media and in some scientific journals. In this regard, careful study of the literature including pre-clinical or clinical data is warranted if some sideeffect has been observed/reported with use of Guduchi.

Several species allied to Guduchi are used in one or other form in Ayurveda and other systems of medicine. Tinospora malabarica addressed as Pinda guduchi in Ayurveda is considered to be therapeutically superior as compared to Guduchi. Tinospora crispa and other species are considered to be therapeutically inferior as compared to Guduchi. However, scientific literature reveals several promising pharmacological activities associated with extracts based on *Tinospora crispa*.

Pharmacopoeial standardization of guduchi based formulations is vital and methodology as described in ancient texts is mandatory to get a quality finished products falling in classical medicine category. Similarly, standard methodology should be followed in standardized extracts based on guduchi. Guduchi not only finds use in AYUSH systems of medicine but is freely used in nutraceuticals and functional foods. Guduchi is mentioned in the list of medicinal plants include in FSSAI database.

Fact-finding whether use of Guduchi on short or long-term is safe or associated with side-effects must be established. Traditional healers and long history of medicinal use in various AYUSH systems of medicine suggest Guduchi to be a safe drug. Guduchi has curative and preventive aspects in medicine. Both these aspects should be kept in mind before reaching non-toxic/toxic status for guduchi. Exploring search engines like AYUSH research portal, Research Management System by CCRAS, Annotated Bibliography of Indian Medicine and above all PUBMED did not revealed toxic nature of Guduchi.

Guduchi contains a wide range of phytochemicals including alkaloids, glycosides, sterols extra. Berberine is the major alkaloid reported to have diverse pharmacological profile. Berberibe has significant hepatoprotective and cholagouge action. Guduchi in addition to immunomodulatory activity has been reported to have significant hepatoprotective activity.

The ministry of AYUSH has stressed that looking species like Tinospora crispa may manifest adverse effects. A comparative account of morphology of Tinospora cordifolia and Tinospora crispa has been included. Self medication with Tinospora cordifolia is very common affair in India. Sometimes, stem of Tinospora cordifolia is procured from herbal vendors or collected from wild sources. As per advisory, circulating species like Tinospora crispa may be responsible for ill effects. Toxic hepatitis has been already reported by consumption of *Tinospora crispa*.

If a person is interested in self medication with Tinospora cordifolia then the drug must be identified from a certified botanist or institute. Minority of AYUSH has mentioned list of recognized testing laboratories for the purpose of testing of raw material. The consumer can approach State AYUSH department or State branch of National Medicinal Plant Board for detailed information.

If the drug has to be procured from herbal vendor or pharmacy, then the buyer should demand for botanical identification certificate. The herbal vendors are least bothered about shelf-life of stored medicinal herbs and person buying the herb should enquire about date of purchase. In this regard, DNA bar coding may the answer for correct identity of the procured medicinal plant. Majority of the herbal vendors and pharmacies collect and store guduchi from wild sources due to wide distribution. In this regard, storage should be mentioned as per methodology mentioned in pharmacopoeia or pharmacognosy books.

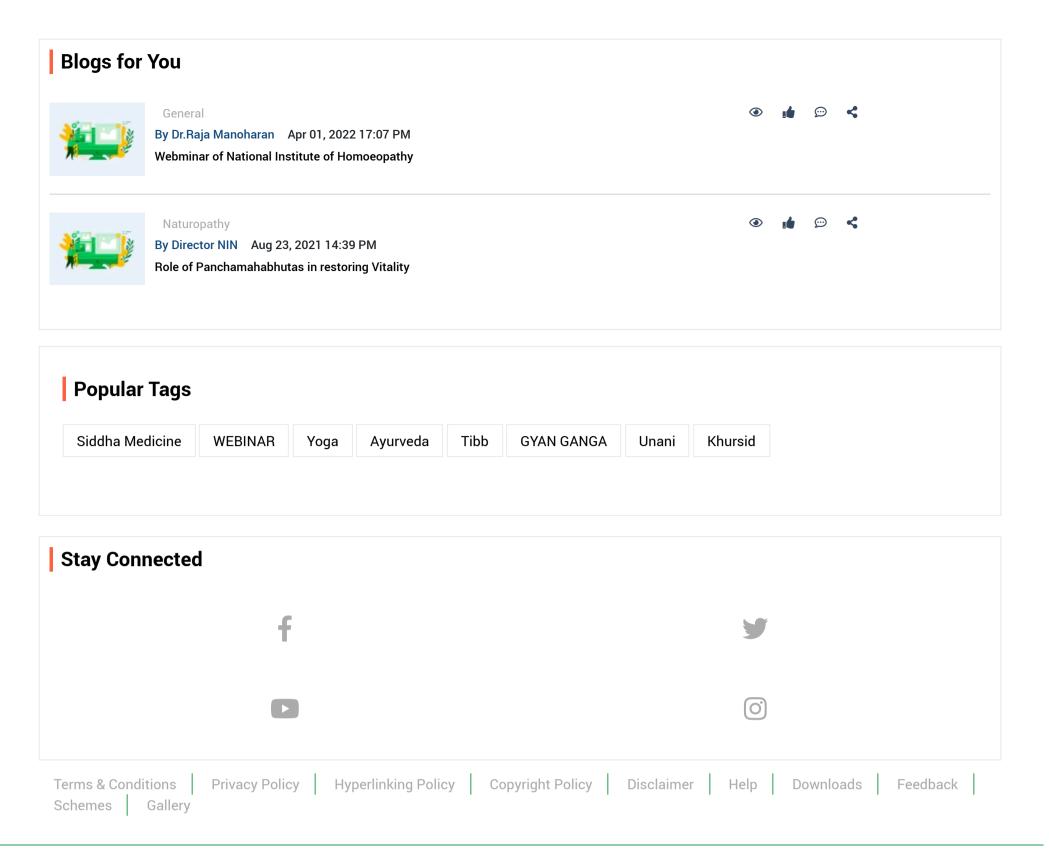
In light of above discussion, safety profile of Tinospora cordifolia, Tinospora malabarica, and Tinospora crispa should be established particulate in chronic studies. Patients should be vigilant to consume formulations on advice of a professionally qualified physician. If any suspected adverse event occurs after intake of AYUSH medicine it may be reported to the nearby Pharmacovigilance centre through an AYUSH physician. State Drug Licensing authorities must ensure actual presence of guduchi in finished formulations for compliance purpose.

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