Journal of Complementary Medicine
And
Alternative Healthcare
ISSN: 2572-1232

Juniper Publishers
key to the Researchers

Opinion
Volume 10 Issue 2 - August 2019
DOI: 10.19080/JCMAH.2019.10.555784

J Complement Med Alt Healthcare

Pleiotropic Effect of Herbs: Hepatoprotective and Hepatotoxicity

Thakur Gurjeet Singh*, Onkar Bedi, Varinder Singh and Amarjot Kaur

Chitkara College of Pharmacy, Chitkara University, India

Submission: July 25, 2019; **Published:** August 20, 2019

***Corresponding author:** Thakur Gurjeet Singh, Associate professor and HOD, Chitkara College of Pharmacy, Chitkara University, Punjab, India

Opinion

Every herb of our mother earth has therapeutic as well as harmful effects, so term Pleiotropic effect of herbs is better stint for defining herbs. Although herbal remedies and their active phytoconstituents have a potential to treat devastating hepatic disorders, but they are also known to possess hepatotoxic properties. Ayurvedic drugs as well as their preparations act in a holistic manner to treat liver disorders via targeting multiple pathways but still there is a need to explore their novel hepatoprotective mechanism along with possible harmful and toxic outcomes. Therefore, it is the responsibility of the user to use herbs as Amata or Sudha not like Visah. Our purpose is not to dampen the use of herbal drugs, but aware all researchers and clinicians for the usage of herbs with good practice.

The plants like Andrographis paniculata, Ocimum sanctum, Solanumnigrum, Silybummarianum, Phyllanthus niruri etc. were proved to be have hepatoprotective action [1]. Several hepatoprotective mechanism of herbal drugs have been revealed such as the interaction with various CYP isoforms, capability to decrease oxidative stress via increasing endogenous antioxidants like reduced glutathione, Catalase, level of Phase II/antioxidant enzymes decrease inflammatory mediators' releases and to inhibit the entry of toxins to the cells [2-4]. Moreover, natural products have shown great promise in combating the toxicity of several commonly used drugs, including acetaminophen and paracetamol. However, like all apathic medicines there are numerous herbals medicines which causes hepatotoxicity due to their large doses and drug abuse. Herbal products including Shou Wu Pian (Polygonummultiflorum), Breyniaofficinalis, Germander (Teucriumchamaedrys), Chaparral (Larreatridentata), Actractylisummifera, Impila (Callilepsislaureola), Pennyroyal (Menthapulegium), Greater celandine (Chelidoniummajus), Kava (Piper methysticum), Black cohosh (Cimifugaracemosa), Noni juice (Morindacitrifolia), Gotu Kola (Centellaasiatica), etc. are reported to have liver damaging effects [5]. These products when consumed cause symptoms ranging from acute, chronic, cholestatic, fulminant, and acute autoimmune-like hepatitis to acute liver failure, and liver cirrhosis. The exact mechanism of their toxicities is largely unknown; however, involvement of oxidative stress and apoptosis is frequently reported [5]. There are numerous validated scientific evidences revealing the hepatoprotective potential of herbs including, polygonummultiflorum thumb. and Radix bupleurion the contrary these drugs are also documented for their hepatotoxicity at higher dosage [6,7]. Therefore, prescription-based bestowing of herbal drugs is certainly required to control herbal induced hepatotoxicity [8]. Additionally, Numerous natural products, are now widely accepted for their hepatoprotective activity and used in various marketed hepatoprotective formulations like Liv 52 (Himalaya Drug Co, Bangalore), LIVOZON M/S Hind Chemicals, Kanpur, Liver Care, 180 Vegetarian Capsules(Himalaya Drug Co, Bangalore), LIVOTRIT (M/S Zandu Pharmaceuticals Bombay) etc. [1]. Today's demand is to promote the use of natural marketed preparation as supplementary medication but with proper care and practice. However, a majority of natural products investigated to date are non-toxic, but some studies have shown liver toxicity by certain natural products. Therefore, the proper selection of the herbal medicines is also necessary [9]. It is envisioned that natural products will not only lower the risk of drug-induced liver damage, but also provide an alternative solution to remedy the drug-induced hepatotoxicity.

Competing interest

The authors declare that they have no competing interests.

Acknowledgement

We acknowledge the Chitkara University for providing facilities.

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DOI: 10.19080/JCMAH.2019.10.555784

How to cite this article: Thakur Gurjeet Singh, Onkar Bedi, Varinder Singh and Amarjot Kaur. Pleiotropic Effect of Herbs: Hepatoprotective and Hepatotoxicity. J Complement Med Alt Healthcare. 2019; 10(2): 555784. DOI: 10.19080/JCMAH.2019.10.555784