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A REVIEW ON MEDICINAL VALUE OF PLANTS

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ABSTRACT

Medicinal plants are well-known to have various therapeutic values that can be used for treatment of many ailments. India is said to be Botanical Garden in the world since it is the medicinal plants largest producers. The medicinal plants which have therapeutic values to treat various diseases and provides high quality of food and raw materials too. Indian Medicinal plants of 8000 species which account for nearly 40-55% in the higher flowering plant species. Traditional medicine consumes by people across the globe ever since a longer time. This paper surveys on several reports that describes the medicinal activity of plants. In this modern years, usage of traditional medicine which has therapeutically evidences on plant research have received significant interest nowadays.

Keywords: Medicinal plants, therapeutic values, traditional, free radicals, cancer, treatment

INTRODUCTION

ANTIOXIDANTS FROM MEDICINAL PLANTS

The atoms or molecules with singlet which makes them highly reactive due to unpaired electron are said to be free radicals. These oxidative free radicals are produced due to the metabolic reactions that forms chain reactions which leads to membrane, peroxidation, nuclic acids damage, etc. which are associated with atherosclerosis, cancers, neurodegenerative disorders and inflammatory bowel diseases. The dietary and endogenous compounds like superoxide dismutase, ferritin, transferrin, reruloplasmin, tocopherol, carotene and ascorbic acid which have anti-oxidants and free radical scavenging properties. The minimal amounts of reactive oxygen species are repeatedly formed in the body of cell membrane which acts at the site of generation which results in damaging cell structures including membrane lipids, proteins, enzymes and nucleic acids.

MEDICINAL PLANTS FOR CANCER TREATMENT

Natural plant products used for the treatment of various pathogenic diseases for several years. Indian medicinal plants possess anti-cancer activity as *Allium sativum* which has more than 100 bio-beneficiary secondary metabolites, like allin, allinase, allicin, Sallyl- cysteine (SAC), Diallyl disulphide (DADS) (Khaled Nabih Rashed, 2014). On the other hand, anticancer activity of these compounds are well established in cultured cell systems in general only, and there *in vivo* animal model systems or human studies which are however to be established. The scientists assessed 166 genera of a total 200 medicinal plants which comes under 61 families studied and found that most of the plants were used for various ailments like skin inflammation, skin infection, snake bites, diabetes, headache, cold, ulcer, urinary tract infections, etc. (Nandagopalan et al., 2011). Rubiaceae of plant species (13 nos.) were predominant significant which is then followed by plant species of Papilionoideae (12 nos.).

The oxidative stress plays an important role in anaemic development in the case of malarial infected patients which results in an increase in antioxidant status shown to be more effective from malarial infection retrieval (Ayoola et al., 2008). The four medicinal plants have been traditionally used in the treatment of malaria due to its antioxidant activities in south-western Nigeria were determined. The antioxidative effects were revealed in 123 extracts prepared from 59 plant samples collected from Tirupura district (Rajendra Kshirsagar and Shakti Upadhyay, 2008). Their ability of scavenging free radical assays was measured by DPPH assay. The study showed sixteen extracts with strong antioxidant capabilities.

The phytochemical compounds were extracted using various solvents from *Piper nigrum* and *Piper cubeba*. The compound identified as alkaloid through preliminary screening and confirmed the same through confirmatory test (Gayatri Nahak and R.K. Sahu, 2011). In *Piper cubeba*, the high antioxidant activity was found from ethanolic extract i.e. 77.61±0.02% whereas in *Piper nigrum* extracts with 74.61±0.02% were found to be 10.54±0.12µg/mg and 14.15±0.02 µg/mg respectively. The methanolic extracts of *Casia fistula* bark were analysed for the antioxidant activity, phytochemical composition and vitamins content. In which high antioxidant activity and highest percent inhibition of DPPH (91.66%) were found to be prominent amongst the other plants studied. The results also revealed the presence of considerable amount of bioactive elements that comprises of alkaloids which varies from 1.31 to 1.64 mg/100g DW, whereas flavonoids from 36.2 to 76.2 mg/100g DW and Saponins were found to be 0.883 to 2.251 mg/100g DW while tannins of 0.45

to 0.85 mg/100g DW and total phenol content was found to be 110 to 210.2 mg/100g DW (Umesh Kumar et al., 2012).

The scientists were conducted and analysed by collecting 31 number of medicinal plant species from 19 families which are commonly used as traditional medicine in Northeast Thailand which can be used for various stomach infections and analysed for their total antioxidant activity, free radical scavenging activity, contents of total phenolic and ascorbic acid (Pornkamon et al., 2011). In which, the stronger total antioxidant activity and higher amount of total ascorbic acid and phenolic were shown to have anti-tussive activity than anti- diarrheal relief, whereas digestive tonic group tends to have more free radical scavenging activity. The researchers were studied the traditionally used herbs in India, the study revealed about 63 medicinal value herbs and each therapeutic value of it has been described. Several reports described due to the presence of antioxidants shown the anticancer activity of medicinal plants. And also due to its ease in availability, cheap and retain no toxicity. Therefore, several combinations of these plants active components were studied after isolation and identification which possessed to have their synergistic effects (Umadevi et al., 2013).

The studies found that the various anti-carcinogenic plants. These plants possess to have good antioxidant and immunomodulatory properties that leads to its anticancer activity. The anticancer medicinal plants of foreign origin, which are used by people all over the world due to its anticancer activities (Rajandeep Kaur et al, 2011). Thus, its activity importance is to produce several novel anticancer drugs from these medicinal plants. They also opened up with a detailed review on importance of ethno-medicinal plants from Indian origin for the cancer treatment by discovering the values of various medicinal plants and also for discovery of new drug for the researchers across the globe (Dhanamani et al., 2010). The scientists described the oxidative stress which lead to gene mutations in turn affects intracellular signal transduction and transcription factors that leads to carcinogenesis. Since, antioxidants are good protector of the body that prevent from oxidative stress and thereby stabilizing free radicals. The plants are good and cheaper sources for prevention and treatment of oxidative stress and its natural antioxidants from plants are being used for cancer treatment (Ahmed et al., 2013).

The scientists were studied the distribution of moieties in various six medicinal plants extracts of different families were assessed through comparative analysis. The plant extracts were analyzed for radical scavenging activities against 2, 2 – Diphenyl -1- picrylhydrazyl radical

(DPPH) (Sigma - Aldrich) and determined their activity by UV spectrophotometer at the wavelength of 517 nm. The significance of these traditional medicinal plants and their importance in the chemical constituent's distribution were deliberated with relevant to plants of ethano medicinal role in Nigeria (Olajide et al., 2013). The researchers reviewed the various antioxidants classification and their characteristics with its measurement level in food and free radicals were also documented. Due to the antioxidants chemical constituents which also includes their chain reactions, molecular structures and its reaction mechanisms, their bio-chemical activity were also studied. Further, the medicinal applications due to its pharmacological effects, their therapeutic properties and future superior antioxidants amongst various plants were also stated in this article (Hamid et al., 2010). These review article summaries the action mechanism of free radicals with respect to cellular events, including their effects of growth factors and tumour suppressor genes and their enhancement on mitogenic signals due to its cell remodelling participation, proliferation, apoptosis and autophagy on their genetic instability. This article also stated the relationship feasibility between the free radicals and their inflammation (Sandra et al., 2013).

The Researchers studied the biochemistry of ROS/RNS and their sources in the generation of free radicals that damages DNA, proteins, and lipids (Marian Valko et al., 2006) which has the important role of glutathione as antioxidants for the maintenance of cellular redox homeostasis which has an action mechanism of ROS-induced signalling pathways. The functions of ROS in redox regulation of normal physiological functions, plays a role in pathophysiological implications of altered redox regulations like human diseases. The Scientist studied various medicinal values of herbal plants which can be used for cancer prevention and treatment. Plants with efficient therapeutic values are used for treating diseases which has been established long time. In this current writing, an effort has been put forth to study the medicinal plants that can be used for cancer treatment that attracting nurses to ICU (Khaled Nabih Rashed 2014).

The researchers studied plants which found to have numerous antioxidant activity even there was more diverse amongst these results. The antioxidant properties that can be determined with DPPH and ABTS scavenging assays as well as FRAP test (Berłowski et al., 2013). The results were strongly correlated with total phenolic content, while there was no correlation found with the carotenoid content. And they also described that the action mechanism by understanding the predominant role and found that the oxidative stress holds in the development of disorders like cardiovascular, degenerative conditions, rheumatic, metabolic syndrome, and in ageing

which is to be an important feature of multipotent therapies as it has antioxidant activity. There are various traditional medicinal plants that can be used since many years (Suruchi Singh et al., 2013). There are a group of herbal preparations in the Indian customary health care system in the name of Ayurveda and Rasayana preparations which are recommended for their antioxidant activities.

CONCLUSIONS

Medicinal plants endured to various subject for extensive screening worldwide, in an effort to progress more efficient in anticancer treatments. In many cases, the active compound structures have been determined, and in some cases the potential action mechanisms were elucidated. From this study, it has been concluded that the herbal plants are used as medicines against various ailments like diseases and disorders. It also pointed that many plants have antioxidant properties that are found to be effective against cancer.

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