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HERBAL MEDICINAL PLANTS AS IMMUNITY BOOSTER'S

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Abstract: It is investigated that there is extensive range of health-care practices is required in order to utilize the beneficial effects of herbal medicinal plants in Ayurveda. Ayurvedic medicine is being of immense importancein Indian traditional medicinal plants that evident incredible changes for therapeutics of variety of diseases and disorders among human beings Currently, thereis great deal of interest for the exploitation of herbal medicinal plants for enhancing immunity against microbial infection. In the present article attempt has been made to elucidate important medicinal plants for immunity enhancer.

INTRODUCTION

Due to excessive use of antibiotics, there is much possibility for emergence of multidrug resistant pathogenic strain of microbes and pose severe health issues and clinical trials for therapeutic of disease (Alsuhaibani and Khan, 2017). The natural products obtained from herbal plants provide subsidiary important signal in order to explore the cause behind the sickness (Khanna *et al*., 2020). It is reported earlier that in Ayurveda approximately more than 25,000 herbal products and its formulations have been used in folk remedies (Pundarikakshudu and Kanaki, 2019; Khanna *et al*., 2020).

The exploitation of medicinal plants for their immune boosting potential have been preferred over pharmaceutical drugs due to their low toxicity and costs. Currently, there is much growing interest to use the medicinal plants which is acts as modulators of the complex immune system. Researchers have focussed their research interest on variety of herbal products that possess indigenous immune-stimulating properties as a useful feature in order to help in minimizing the risk of several lethal disease like cancer (Khodadadi, 2015). The herbal plants encompass a wide-ranging of phytoextracts and phytochemicals, have been identified such as the flavonoids, lignans, terpenoids, polyphenolics, sulfides, saponins, carotenoids, curcumins, plant sterols and phthalides. Many of the medicinal plants do contain potent antioxidant that provide a significant protection against serious chronic diseases. These compounds may protect low density cholesterol (LDL) from the oxidation, inhibit cyclooxygenase and lipoxygenase enzymes that prevent lipid peroxidation (Kyo *et al*., 2001; Gebreyohannes and Gebreyohannes, 2013). Additionally, the medicinal plants are also rich in rich in flavonoids, vitamin C and carotenoids that help to enhance the ones immune system. The flavonoid-rich herbs may also possess mild anti-inflammatory action and helps in immunomodulation.

SECONDARY METABOLITES FROM SOME MEDICINAL PLANTS

The exploitation of herbal medicinal plants for boosting the immune potential have been preferred over pharmaceutical drugs due to their low toxicity and costs. Currently, there is much growing interest to use the medicinal plants which is acts as modulators of the complex immune system. Researchers have focussed their research interest on variety of herbal products that possess indigenous immune-stimulating properties as a useful feature in order to help in minimizing the risk of several lethal disease

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Glycyrrhizin obtained from the root of *Glycyrrhiza glabra* a member of family Fabaceae and are rich in various flavonoids such as β-sitosterol, hydroxyl coumarins and glycyrrhetinic acid. It is reported earlier that in ancient time Glycyrrhizin has been employed for the treatment of various chronic ailments including bronchitis, gastritis and jaundiceetc. (Ramos-Tovar *et al*., 2020).Garlic plays important roles as an immune system enhancer by stimulating natural killer cell activity. Earlier studies suggested that garlic is a promising candidate which is used as an immune modifier andconserves the homeostasis of immune functions (Kyo *et al*., 2001). It comprises high concentration of sulfurcompounds that exhibit therapeutic effects. Several frequently used herbs have been recognized by the National Cancer Institute as possessing cancer-preventive properties. These herbs belong to the members of various families such as Liliaceae, Lamiaceae, Zingiberaceae and Apiaceae (Gebreyohannes and Gebreyohannes, 2013). Numerousother herbs contain a wide range of alkaloids likes phytosterols, saponins, flavonoids, triterpenes, and carotenoids, which have been shown to be anticancerous. These beneficial substances act as antioxidants and electrophilic hunters that stimulate the immune system, inhibit hormonal actions and metabolic pathways associated with the development.Özçelik *et al*. (2011) critically examined and found that the antiviral activity of a various commercially available natural compounds, such as namely the alkaloids yohimbine and vincamine (indole-type), scopolamine and atropine (tropane-type), colchicine (tropolone-type), allantoin (imidazolidine-type) etc. were tested for their *in vitro* antiviral, antibacterial, antifungal and cytotoxicity activities.

LIFE STYLE

Lifestyle is a way that is concern with common people, groups and nations and is formed in specific geographical, economic, political, cultural and religious text. Life-style is referred as of an inhabitant of a particular region in given time and place. It includes daily routines behaviours and functionality of an individuals in kind of profession, fun and diet activities.

In recent decades, life style as an important factor of health is more concerned by researchers. According to report of WHO, approximately 60% of related factors are responsible to individual health and quality of life are correlated to lifestyle (Ziglio *et al*., 2004). Millions of people follow an un-healthy lifestyle. Hence, they encounter illness, disability and even death. Problems like metabolic diseases, joint and skeletal problems, cardiovascular diseases, hypertension, overweight, violence and so on, can be caused by an unhealthy lifestyle. The relationship of lifestyle and health should be highly considered. Today, wide changes have occurred in life of all people. Malnutrition, unhealthy diet, smoking, alcohol consuming, drug abuse, stress and so on, are the presentations of unhealthy life style that they are used as dominant form of lifestyle.

NUTRIENTS AS IMMUNITY ENHANCER

There is need to supplement a suitable and appropriate nutrition for all cells to function properly and optimally and this also includes the cells in the immune system. An "activated" immune system require further attention by the cell to increases the demand for energy during infection havingbetter basal energy spending during fever (Childs *et al*., 2019). Thus, better nutrient culmination for the best immunological

outcomes would be nutrition, which supports the functions of immune cells allowing them to initiate effective responses against pathogens. Some micronutrients and dietary components have very specific roles in the development and maintenance of an effective immune system. It is reported that arginine amino acid is indispensable for the generation of nitric oxide by macrophages cells, and the micronutrients likes vitamin A and zinc regulate cell division and hence are essential for a successful proliferative response within the immune system (Child *et al*., 2019). A single nutrient has potential to exert multiple diverse immunological effects, such as in the case of vitamin E, it is act as both antioxidant, inhibitor of protein kinase C activity and also potentially interacts with enzymes and transport proteins in the cells(Lee and Han, 2018).

CONCLUSIONS

Since long herbal medicinal plants are being used by the Ayurveda for the treatments of variety of diseases in human beings. These medicinal plants comprised of several phytonutrients such as alkaloids, flavonoids, tannins, polyphenols etc.for enhancing the immunity against any microbial infection. There is much warranted to explore secondary metabolites from the medicinal plants and tested for enhancement of immunity.

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