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Pharmaceutical Sciences **Review Article……!!!**

MEDICINAL PLANTS WITH PHYTOCHEMICAL COMPOUNDS

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ABSTRACT

Plants are naturally gifted at the synthesis of medicinal compounds, whose characterizations has led to discovery of new, cheap drugs with high therapeutic potential. Medicinal plants have been used in health care since time immemorial. Studies have been carried out globally to verify their efficacy and some of the findings have led to the production of plant-based medicines. Medicinal plants play vital roles in disease prevention and use fit into all existing prevention strategies. The use of plants for treating diseases is as old as the human species. Popular observations on the use and efficacy of medicinal plants significantly contribute to the disclosure of their therapeutic properties, so that they are frequently prescribed, even if their constituents are not always completely known.

INTRODUCTION:

Medicinal plants contain a wide variety of secondary metabolites or compounds such as tannins, terpenoids, alkaloids, flavonoids that dictates the therapeutic potency of the plants most especially the antimicrobial activities. Similar phytochemical constituents such as flavonoids and tannins were also revealed to tbe active against pathogenic bacteria such as Bacillus cereus, staphylococcus aurous amongst others.

The tannins present in medicinal plants make it useful in production of antiseptic soap which are commonly used in bathing or cleansing of skin surfaces. It was documented in literature that phytochemicals can be toxic to filamentous fungi, yeasts and bacteria and also inhibitory to vital role reverse transcriptase. Saponins were reported as a major components, acting as antifungal secondary metabolite. A wide range of physiological activity of saponins, steroids, phenols and tannins are found to be more predominant and therefore may be responsible for the antimicrobial action.

Phytochemicals:

Phytochemicals can have complementary and overlapping mechanisms of action in the body, including antioxidant effects, modulation of enzymes action, stimulation of the immune system, modulation of hormone metabolism, anti bacterial and antiviral effect, interference of DNA replication and physical action whereby some may bind physically to cell walls thereby preventing the adhesion of pathogens to human cell walls.

Alkaloids:

Alkaloid is a plant-derived compound that is toxic or physiologically active. Some alkaloids such as isoteropodine, pteropopine have anti-microbial activity whereby they act by promoting white blood cells to dispose harmful micro-organisms and cell debris. Highly aromatic planar quaternary alkaloids loke barberine, piperine and harmane work by intercalating the DNA and cell wall.

Tannins:

Tannins are astringent, bitter plant polyphenols that either bind and precipitate or shrink protenins. They have physiological role by acting as antioxidants through free radical scavenging activity, chelation of transition metals, inhibition of prooxidative enzymes and lipid peroxidation. Also, they have economic role of tannin is leathers industry. Endocrine role in Tannin interacting with estrogen receptors.

Flavonoids :

The are structural derivatives of flavones, containing conjugated aromatic systems, often bound to sugars as glycosides, and they are phenolic and water soluble in nature. The exert their role as anti-oxidants, and hence protecting against degenerative diseases. They also act as natural biological modifiers as anti-allergens anti-inflammatory, and induces phase two. This limits cell division and growth. They have economic values as source of cheap, environment friendly defergents and cosmetics.

Saponins :

These are service active agents with soap-like properties and can be detected by their ability to cause foaming and to haemolyse blood cells. They have anti-inflammatory, emetics, antiviral, antifungal, insecticidal, molluscicidal, piscidal and anti bacterial activity.

Phytosteroids :

Phytosteroids are plant steroids that may or may not as weak hormones in the body. They are mainly used to treat reproductive complications such as treatment of venereal diseases, used during pregnancy to ensure an easy delivery, as well as to promote fertility in women and libido in men. They are also anti-microbial, analgesic, anti-inflammatory, and of use in treating stomach ailments and in decreasing serum cholesterol levels.

Terpenoids:

These are derivatives of isoprence molecule having a carbon skeleton built from one or more C15 units. They exert roles as anti-bacterial, anti-fungal, anti-viral, anti-protozoan, anti-allergens, as immune boosters and as antineoplastic. They are also used to alleviate epilepsy, to relative cold, influenza, cough and acute bronchial disease.

Cardiac glycosides:

Cardiac glycosides occurs as a complex mixture together in the same plant and most of them are toxic, however many have pharmacological activity especially to the heart. They are used in treatment of congestive heart failure, whereby they inhibit Na^+/K^+ -ATP ase pump that causes positive ionotropic effects and electrophysiological changes.

CONCLUSION:

Natural products have been and are still a major plank in supporting the primary health systems. Their bio-activity is mainly associated with secondary metabolites, often elaborated for the plant defense. These phytochemicals are known to have several properties important to cells including, prophylactic, therapeutic, nutritive and immune-modulative properties. The biochemical evaluation of the selected plant extracts showed that fthe selected plant contains oils and fats hetero cyclic nitrogen compounds, tricyclic flaronoids, steroidal compounds, cyclic and acyclic phenol pentacyclic saponin, tannins, mucilage, carbohydrates, reducing sugar, cardiac glycosides, and different trace elements. In conclusion, the isolated compounds from the selected plant or plant extracts could be used as medicine to treat illness.

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