



A Review on Antihyperlipidemic Activity of Medicinal Plants

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ABSTRACT

The purpose of this study was to investigate the potential antihyperlipidemic activity in some plants. It is the most dangerous risk factor for heart disease. Allopathic antihyperlipidemic drugs therefore have a large number of side effects. Medicinal plants are widely used by many people to treat various ailments and have a significant impact on the global economy. Herbal remedies based on herbs, herbs, and herbs often play a major role in the global health system. Products derived from natural sources are generally less toxic, and more readily available, so the demand for herbal medicine is increasing day by day. This review was performed to evaluate herbal plants for antihyperlipidemic activity. And this is especially evident in the hyperlipidemic activity of significant medicinal plants.

Keywords : Herbaceous, Hyperlipidemic Activity, Lipoprotein, CVS

INTRODUCTION

Hyperlipidemia is a genetic disorder characterized by high levels of lipids such as fats, cholesterol and triglycerides in the blood. These fats / lipids enter the walls of the arteries and increase the risk of a single disease which is anemia, which can lead to strokes, myocardial infarction, pancreatitis, heart disease, cardiovascular disease.

There is also a disruption of lipid metabolism resulting from an increase in the concentration of various lipids and lipoprotein components in plasma. Hyperlipidemia is of two types, either primary or secondary. Primary syndrome can be treated with hypolipidemic drugs, as well as secondary syndrome caused by diabetes. Genetic disorders and daily diet of pro-saturated fat, calories, cholesterol play a major role in causing dyslipidemia. A major developmental disorder that causes hyperlipidemia that involves changes in lifestyle habits; i.e. fatty foods more than 40-50 percent of total calories. With hyperlipidemia there are a large number of synthetic drugs available, not many are useful for all lipoprotein disorders, and all medications are linked to a number of side effects. That is why nowadays some substances are obtained from natural sources that are less toxic, less expensive and provide more safety and effectiveness in non-invasive practices. Hyperlipidemia is divided into a family caused by genetic abnormalities, or findings that lead to the absorption of chylomicrons.

Antihyperlipidemic agents help to lower the level of fat in the blood. Some antihyperlipidemic agents mean lowering low-density lipoproteins (LDL) cholesterol levels, some agents lowering triglyceride levels and others helping to raise high-density lipoprotein (HDL) cholesterol. By lowering (LDL) cholesterol, they can prevent both the primary and secondary symptoms of heart disease.

Medicinal plants play a major role in human health care. Plants and plant products found have been part of health care since ancient times. About 80-90% of the world's population expects the use of traditional medicine based on plant materials. In the treatment of various ailments including heart disease, herbal drugs play an important role. A variety of plants have been studied that affect the cardiovascular system and that are used to treat heart disease, but further research needs to be done to protect the heart. Studies on beneficial medicinal plants have a great need for the production of herbal drugs. That is why everyone should know or have a good knowledge of herbal remedies and their benefits and uses. It is therefore very important to study and record their use of medicinal plants.

In this current review, various extraction or experimental procedures and researchers' efforts to test the potency of medicinal plants in order to discover a new antihyperlipidemic molecule and improve their possible mechanism of action.

Allium sativum



Family - amaryllidaceae

This current study proposes to examine the effect of garlic extracted from lipid profiles. This plant sells a lot of herbal products on the market. It is also a traditional remedy for diseases related to human health. It is also used as a food additive. The active ingredients in garlic contain an enzyme that is sulfur-containing compounds (alliin) that produces compounds. Alliin (e.g. allicin) has significant biological effects on the immune system, in treating heart disorders, cancer and other areas. Allicin reacts and converts slowly into different chemicals very quickly. It is recorded that all products made without allicin such as old garlic extract.

Fenugreek seeds



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Family- fabaceae

Fenugreek seeds (*trigonella foenum _graecum*) is a dietary and herbal remedy fenugreek seeds may also involve the development of testosterone and estrogen levels and people often use fenugreek during menstruation, high cholesterol, sexual problems. Fenugreek contains chemical elements such as flavanoids, alkaloids, coumarins, saponins, and vitamins. In alkaloids the main component is trigonelline, and in coumarins, it combines cinnamic acid with scopoletin. *Trigonella foenum* extract can be used for antihyperlipidemic activity as well as for anti-obesity activity in close proximity to promote lipid-reducing agents. it is therefore discontinued to be regarded as inherited and safe treatment to prevent hyperlipidemic delays and cardiovascular disorders resulting in obesity or obesity.

Coptidis rhizoma (huang lian- in china) is a rhizome



Family – ranunculaceae

The *Coptidis rhizome* is a common part of traditional medicine. It has been used to treat cardiovascular disease including problems such as obesity, hyperlipidemia, and diabetes and leading to disruption of lipid metabolism. The active ingredients contain rhizome, alkaloids such as berberine, coptisine, palmatine, epiberberine using cardioprotective activity. There is biosynthesis of 3-hydroxy-3methylglutaryl coenzyme reductase activity by low density lipoprotein receptors, lipoprotein release in the blood, storage, degradation, and conversion to bile acids. RC produces a lipid-lowering function that is lowered by lowering cholesterol levels in a variety of animals treated with RC extract. The main bioactive compounds in RC i.e. berberine's hypolipidemic effect reach higher regulation of LDLR Mrna and protein exposure.

Hibiscus cannabinus L. Kenaf

Family – malvaceae

Hibiscus cannabinus is an annual herbaceous tropical plant that has great potential not only fiber but also strength. Kenaf seeds are a perishable part of that plant. It is grown in tropical and subtropical climates. It has a high cellulose content and a low lignin content. Kenaf is a plant with a long bast fiber (57%) and a fiber core (41%) that needs to be separated. This plant is widely used in the making of all kinds of paper including special paper. Kenaf chemicals such as carbohydrates, organic acids, anthocyanins, polyphenols such as flavonoids and phenolic acids. Indicated extract based on antihyperlipidemic activity. The dose level is estimated at (400mg / kg) where the release indicates a significant decrease in serum levels i.e. TC, TG, LDLC, and TBARS. This extract is used to prevent microvesicular steatosis of the liver in hyperlipidemic mice. Extract shows that the potent activity of lowering lipid in the diet has improved hyperlipidemia which applies to other therapeutic benefits given to this plant.

Sida cordifolia

Family – malvaceae

Sida cordifolia is a perennial herb. *Sida cordifolia* is used in ayurvedic medicine. It is used to treat inflammation of blennorrhoea, oral mucosa, nasal congestion, nasal congestion, and respiratory problems. The chemical ingredients in *sida cordifolia* contain phenethylamine, ephedri and, pseudophedrine. *Sida cordifolia* alcohol extraction shows amazing results showing a significant decrease in total levels of cholesterol, triglycerides, plasma-creatinine, low density lipids. And especially the increase in high levels of lipid congestion in mice with diabetes. Mostly a dose of 400mg / kg is given.

Cinnamomum tamala

Family - lauraceae

Cinnamomum tamala is an ayurvedic herbaceous plant. Also known as tejpata or tejpatta. Its leaves have a clove-like aroma. This plant is used to treat bad breath, and then to treat other problems of tuberculosis, dark spots on the face, and dental hygiene. It has benefits in ayurvedic, new and ancient medical literature. The main chemicals in *cinnamomum tamala* are found such as cinnamaldehyde, linalool, eucalyptol. These extracts are used in the treatment of colic and diarrhea.

Terminalia pallida



Family- combretaceae

Terminalia pallida is a genus which is large trees of flowering plant, it has about 300 species dispersed in tropical regions in the world. Active constituents like triterpenes, flavonoids, alkaloids, tannins as well as polyphenols are two main active components of *Terminalia pallida* plant. This plant is entomophilous also has cross pollination which is effected by large bees also butterflies. Which has contribution in bioactivity of *Terminalia pallida*. *Terminalia pallida* fruit with methanolic extract shows more activity against gram negative bacteria. It has biological activity like hyperlipidemic activities in fruits of *T. pallida*. It is used to various diseases like venereal disease, peptic ulcer also used to cure diarrhea, cough, swellings.

Hemidesmus indicus



Family- apocynaceae

Hemidesmus indicus is a prostrate or semi-erect shrub. Use of this plant in ayurveda namely ananthamoola, also known as anantvel, it is also used for preparations of beverages like sharbat and cold drinks. It has also use in ancient medicines, which can be administered in the form of powder, also a decoction as a syrup. The alcoholic extract of *Hemidesmus indicus* has a main antinociceptive activity. The leaves of *H. indicus* contain tannins, hyperosides, flavonoids. Methanolic extract of *H. indicus* if orally administered, possesses the significant dose-dependent prevention against HFD produced oxidative stress, in which decrease in the level of catalase in the aorta. It is used for skin diseases, asthma, urinary diseases also.

Mimosa pudica



Family- fabaceae

Mimosa pudica is sensitive plant which also known as a shame plant. This plant is mainly known for its rapid plant movement. *Mimosa pudica* contain a toxic alkaloid which is mimosine, which shows the antiproliferative as well as apoptic effects. This plant is traditionally used for its different properties, which used in ayurveda, siddha, unani for treating many diseases. It can be use as antidote for snake as well as scorpion bites. The root of this plant is chewed and the paste of root which is applied on bitten area. The root is also used in the treatment of menstrual problems and toothache. It has also used in treatment of dysentery as well as intestinal worms. Ethanol extract have recorded important role in hypolipemic effect by lowering serum levels of biochemical parameters i.e. significant reduce the level of serum cholesterol.

Spirulinaplantensis



Family- spirulinaceae

Spirulinaplantensis (arthrospiraplantensis) is filamentous cyanobacterium. It is used as dietary supplements in aquaculture, aquarium also in poultry industries. It contains essential fatty acids, also amino acids and its pigments. It contain functional groups like phenolics, phycocyanins. The main component in spirulinaplantensis is phycocyanins, which can fight free radicals and also raise the production of inflammatory signaling molecules. It has high antioxidant as well anti inflammatory properties. It also lowers the total cholesterol level and triglycerides which also increases the good HDL cholesterol. This plan is also used in the treatment of Triton X.

CONCLUSIONS

In hyperlipidemia, there is abnormal large amount of lipids. Also there is elevated serum levels of one or more of total cholesterol, then low density lipoprotein cholesterol, total cholesterol, triglycerides, very low density lipoprotein hyperlipidemia is lifestyle disease which can be seriously attacks to human health. And which can produce different disorders like, cardiovascular disease, myocardial infarction, hypertension, atherosclerosis, angina pectoris, congestive heart failure. This article is on the significant roles of medicinal plants in antihyperlipidemic activity. This review concluding that there are so many plants which can prevent various cardio disease also, they have potency for anti-hyperlipidemic property.

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