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A Review on Antihyperlipidemic Activity of Medicinal Plants

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Abstract *— The researchers wanted to see whether any plants had any antihyperlipidemic action, therefore they conducted this investigation. It's the single greatest contributor to potential cardiovascular problems. As a result, there are several negative effects associated with allopathic antihyperlipidemic medications. Many people rely on medicinal plants as a means of treatment, and this has a substantial effect on the world economy. In many parts of the world's healthcare infrastructure, herbal treatments made from herbs, herbs, and herbs play a crucial role. Herbal medication is becoming more popular as people seek for safer, more easily accessible alternatives. The purpose of this study was to assess the antihyperlipidemic efficacy of herbal plants. Important medicinal herbs have been shown to have hyperlipidemic action.*

Keywords *— **Herbaceous, Hyperlipidemic Activity, Liopoprotein, CVS***

I. INTRODUCTION

An excess of lipids including fats, cholesterol, and triglycerides in the blood is a symptom of the hereditary condition known as hyperlipidemia. These lipids/fats infiltrate the arterial walls and raise the chance of anemia, which in turn raises the risk of strokes, heart attacks, pancreatitis, and other cardiovascular diseases.

The rise in plasma levels of different lipids and lipoprot ein components also disrupts lipid metabolism. There are two different kinds of hyperlipidemia: primary and secondary. Both the primary condition and the secondary syndrome brought on by diabetes are treatable with hypolipidemic medication. Dyslipedemia is caused in large part by hereditary conditions and by a diet high in prosporus fat, calories, and cholestrerol. An important kind of developmental condition characterized by hyperlipidemia and requiring behavioral modification (e.g., a diet consisting of more than 40–50% fat). While there are numerous synthetic treatments for hyperlipidemia, not all of them are effective against lipoprotein abnormalities, and all of them come with their own set of risks. This is why non-invasive therapies are increasingly using the use of compounds derived from natural sources due to their lower toxicity, lower cost, and greater safety and efficacy. There are many subtypes of hyperlipedemia, each associated with a different genetic abnormality or set of circumstances that contribute to chylomicron absorption.

The blood fat level may be lowered with the use of antihyperlipidemic medicines. By reducing low-density lipoproteins (LDL) cholesterol, reducing triglycerides, and increasing high-density lipoprotein (HDL) cholesterol, several antihyperlipidemic medicines work to improve lipid profiles. Lowering low-density lipoprotein

cholesterol helps avoid cardiovascular disease's main and secondary symptoms.

The importance of medicinal plants in human healthcare is substantial. Healing has always included the use of plants and plant products. Eighty percent to ninety percent of people worldwide rely on herbal remedies. Herbal medicines are useful in the treatment of several conditions, including cardiovascular disease. Further study is needed to protect the heart, despite the fact that many plants have been investigated for their effects on the circulatory system and are used to treat heart disease. There is a significant need for research into useful medicinal plants in order to create herbal medicines. This is why it's important for people to learn about herbal medicines and how to utilize them effectively. Because of this, documenting and studying their usage of medicinal herbs is crucial.

This article summarizes the present state of knowledge on the potential mechanisms of action and extraction/experimental processes used to assess the efficacy of medicinal plants in the hunt for a novel antihyperlipidemic chemical.

Allium sativum

Family - amaryllidaceae

The purpose of this research is to investigate if garlic oil has any influence on lipid profiles. Many herbal remedies use this plant as an active ingredient. It has also been used historically to treat illnesses that affect people's bodies. It's also an ingredient in several dishes. Garlic's active elements include an enzyme in the form of sulfur-containing compounds (alliin), which are responsible for the production of other chemicals. The immune system, cardiovascular disease, cancer, and other diseases may all benefit from a dose of alliin (e.g., allicin). Allicin undergoes modest reactions and rapid conversions into other compounds. All products, including garlic extract manufactured from stale garlic, which lack allicin, have been documented.

Fenugreek seeds

Family- fabaceae

The seeds of the fenugreek plant (trigonella foenum-graecum) are used in cooking and herbal medicine. People often take fenugreek during menstruation, high cholesterol, and sexual issues, and fenugreek seeds may be involved in the production of testosterone and estrogen levels. Flavanoids, alkaloids, coumarins, saponins, vitamins, and vitamins B and C are only some of the chemical components found in fenugreek. Trigonelline is the primary component of alkaloids, whereas cinnamic acid and scopoletin form the backbone of coumarins. In addition to its potential utility as a lipid-lowering drug, trigonella foenum extract has been shown to have antihyperlipidemic and anti-obesity effects. As a consequence, it can no longer be considered an effective and safe medication for preventing hyperlipidemic delays or cardiovascular diseases related to obesity.

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

Family – ranunculaceae

Coptidis rhizome is widely used in folk medicine. Used to treat cardiovascular disease caused by disturbances in lipid metabolism, including as obesity, hyperlipidemia, and diabetes. Rhizome and alkaloids such berberine, coptisine, palmatine, and epiberberine are the heart-healthy components. Lipoproteins are released into the circulation, stored, degraded, and converted to bile acids; low density lipoprotein receptors biosynthesize 3-hydroxy-3-methylglutaryl coenzyme reductase activity. When administered to a wide range of animals, RC extract reduces cholesterol levels, hence facilitating its lipid-lowering action. The hypolipidemic action of berberine, one of the key bioactive substances in RC, reaches greater levels of control of LDLR Mrna and protein exposure.

Hibiscus canabinus L. Kenaf

Family – malvaceae

The tropical annual herb Hibiscus cannabinus has considerable promise as a source of both fiber and strength. The seeds of the kenaf plant are a very perishable component. It is cultivated throughout the tropics and subtropics. It has a lot of cellulose but not much lignin. Kenaf is a plant that has to be processed in order to separate its long bast fiber (57%) from its fiber core (41%). This plant is often utilized in the production of standard and specialty papers alike. Carbohydrates, organic acids, anthocyanins, polyphenols (including flavonoids and phenolic acids), and phenolic acids are all substances found in kenaf. Antihyperlipidemic action as the basis for recommending this extract. Approximately (400mg / kg) is the dosage at which the release suggests a clinically meaningful reduction in blood levels of TC, TG, LDLC, and TBARS. Microvesicular steatosis of the liver is avoided by administering this extract to hyperlipidemic mice. Evidence from extract supports the use of this plant for its medicinal effects, including the amelioration of hyperlipidemia.

Sida cordifolia

Family – malvaceae

The perennial plant Sida cordifolia. Ayurvedic medicine makes use of Sida cordifolia. Blennorrhea, oral mucosa irritation, nasal congestion, and respiratory issues are all treated with this medication. Phenethylamine, ephedrine, and pseudoephedrine are the chemical components of sida cordfolia. The overall levels of cholesterol, triglycerides, plasma-creatinine, and low density lipids are significantly reduced when an alcohol extract of Sida cordifolia is used. specifically the increased lipid congestion seen in diabetic mice. The typical dosage is 400 milligrams per kilogram.

Cinnamomum tamala

Family - lauraceae

The ayurvedic herb cinnamonum tamala. Tejpat is a kind of Indian flatbread. The leaves smell similar to cloves. In addition to improving oral health, this

plant has been shown to alleviate halitosis, TB, and facial discoloration. There are positive effects described in ayurveda, nun, and other ancient medicinal texts. Cinnamaldehyde, linalool, and eucalyptol are some of the primary compounds contained in cinnamomum tamala. Colic and diarrhea are treated with these substances.

Terminaliapallida

Family- combretaceae

Terminalia pallid is a genus of flowering trees that includes over 300 species found mostly in tropical climates. The active components of the terminallia pallid plant include triterpenes, flavonoids, alkaloids, tannins, and polyphenols.Entomophilous plants rely on huge bees and butterflies for pollination, and this one does, too.Which aids the terminalia's bioactivity.Extracts of Terminaliapallida fruit made with methanol had more antibacterial activity than those made with water. T. pallida fruit contains a biologically active compound with hyperlipedemic properties. It was traditionally used to treat a wide range of illnesses, including venereal disease, gastric ulcer, diarrhoea, cough, and swellings.

Hemidesmusindicus

Family- apocnaceae

The shrub Hemidesmusindicus may either lie flat or stand halfway up. This herb, known as ananthamoola or anantvel in Ayurveda, is also utilized in the making of sharbat and other cool drinks. It was also used in traditional medicine and may be taken as a powder or decoction in the form of a syrup.The alcohol extract of hemidesmus indicus has significant analgesic properties. Tannins, hyperosides, and flavonoids may be found in H indicus leaves. Oral administration of a methanolic extract of H. indicus prevents HFD-induced oxidative stress, as measured by a reduction in aortic catalase levels, significantly and in a dose-dependent manner. As well as treating skin and urinary disorders, it is used to treat asthama.

Mimosa pudica

Family- fabaceae

Mimosa pudica, or the shame plant, is a delicate plant with a negative connotation. The speed at which this plant spreads is the major reason it is so well-known. The poisonous alkaloid mimosine found in Mimosa pudica has both antiproliferative and apoptotic actions. This plant has been utilized in several ancient medical systems like as Ayurveda, Siddha, and Unani to treat a wide range of illnesses. Both snake and scorpion bites may be treated with this remedy. You may treat a bite by chewing on the root of this plant or applying a paste made from the root to the affected region. Both menstruation cramps and toothaches may be alleviated by using the root. It has also been used to treat intestinal worms and dysentery. Significant reductions in blood cholesterol and other biochemical indicators have been shown as a result of using ethanol extract for its hypolipedemic action.

Spirulinaplatensis

Family- spirulinaceae

It is a filamentous cyanobacterium called spirulinaplatensis (arthrospiraplatensis). Aquaculture, aquariums, and the poultry industry all utilize it as a nutritional supplement. The amino acids, pigments, and vital fatty acids are all present. It has phenolic and phycocyanin functional groups. Phycocyanins are the primary antioxidant and pro-inflammatory molecule-producing component of spirulinaplatensis. It's anti-inflammatory and antioxidant capabilities are particularly notable. It raises HDL cholesterol while decreasing LDL cholesterol and triglycerides.Triton X is another patient that benefits from this strategy.

CONCLUSIONS

Hyperlipedemia is characterized by an excessive accumulation of lipids. Hyperlipedemia is a lifestyle condition that may pose major threats to human health, as it is characterized by increased blood levels of one or more of total cholesterol, then low density lipoprotein cholesterol, total cholesterol, triglycerides, and very low density lipoprotein. cardiovascular disease, myocardial infarction, hypertension, atherosclerosis, angina pectoris, and congestive heart failure are all possible outcomes of poor cardiovascular health. The article focuses on the crucial functions played by medicinal herbs in lowering cholesterol levels. According to the findings of this research, a wide variety of plants are capable of warding off cardiovascular illness and even possess anti-hperlipedemic potential.

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