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At glance to the plants having anti-inflammatory activity: A review

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ABSTRACT

From time immemorial man is dependent on plants. The human body has a natural affinity to plants and their products, which are easily absorbed as well as healthier. Medicinal plants are used in treatment of almost all disease. Plants are vast source of active biological compound for new drugs which are safer as well as cost effective. Inflammation is biological response of the human immune system that can be triggered by a variety of factors like damaged cells, toxic compounds, and pathogens. Conventional drugs used for treatment of inflammation has so many disadvantages thus people looking forward safer and effective drug. Various plants are traditionally used in treatment of inflammatory conditions. This review includes some traditionally used herbal plants as an anti-inflammatory drug.

Keywords: Active Biological Compound, Anti-Inflammatory, Herbal Drugs, Inflammation, Treatment.

INTRODUCTION

History and use of herbal medicine

The oldest form of healthcare to mankind is herbal medicine. From ancient time man is dependent on plants. Plant have been used as a medicine since long before recorded history. Herbal medicines are also known as botanical medicine or phytomedicine which contains plant's leaves, seed, root, berries, bark, flowers, seed oil or whole plant. More than 1000 plants are used in various treatments as per Ayurveda. Plants have a long history of use in the treatment of many diseases. Some plants are used in day-to-day life as a spices, food or medicine. In the production of herbs, India is one of the largest countries as a producer of medicinal plants in the world. Herbal plants are interesting source of natural products for various health conditions. They are used because of their safety measures. They are less costly, newer and safer treatment for various diseases. In ancient time, when chemical analysis began, the scientists start doing extraction from plants then they began to modify the active ingredients from plants and later other chemists began making their own version of active components and then herbal medicines decline as drug. According to world health organisation 80% of people worldwide use herbal medicine for treatment of various diseases in India as well as USA. In the past 20 years in the United States, people were dissatisfied with the cost of prescription medications, so they are turn towards organic remedies, has use of herbal medicine increases [1]. Larger proportion of commercial medication used today, are derived from the plants source. To develop less toxic as well as more efficient medicines, drugs derived from plants serves as a prototype [2]. Herbs contains many phytoconstituents and they all are simultaneously work in treatment of any disease.

Inflammation

Inflammation was characterized by Celsius about two thousand years ago by four Latin words which are Rub or, Tumor, Dolour and Caldor. Inflammation is pervasive term, which is elicited by human body in response to obnoxious stimuli as a protective measure [3]. Inflammation at the level of tissue, is characterized by heat or pain, swelling, redness of tissue and loss of tissue function [4]. When uncontrolled inflammation occurs, it may lead various choric diseases [5].

Treatment of inflammation: Anti- inflammatory drugs

Drug use for inflammatory diseases is known as anti-inflammatory drugs. For the treatment of inflammation first line therapy given by doctor are topical NSAIDs (Non- steroidal anti-inflammatory drugs), capsaicin and other ointments but if disease is more systematic and not relieved by these oral NASIDs are use. Because of side effects most of patients like to use herbal medicines for the treatment of inflammatory diseases.

Why anti-inflammatory agents from natural source

From the ancient time so many plants are used for the treatment of inflammatory diseases. Because of the side effect produced by allopathic treatment there is a need of newer and safer drug as well as potent and non- toxic or less toxic anti-inflammatory drug [6]. Plants generally contains more than one phytoconstituents and all of them synergistically act on elements which are targeted from the complex cellular pathway [7]. Wide range of biologically active compounds is present in medicinal plants and they are used as a crude drug or pure phytoconstituents for treating many disease conditions from ancient times [8]. There are more than 1.5 million Ayurvedic practitioners all over the world using medicinal plants in promotional, preventive and curative purpose [9].

Consequence of Indian medicinal plants

From time immemorial man is dependent on plants. Role of plant is significant in human healthcare. Medicinal plants are used in treatment of almost all diseases. As well as the human body has a natural affinity to plants and their products. The present review includes various medicinal plants across the word which have been already reported to have an anti-inflammatory activity in previous research and ancient data. In traditional medicine system plants were used as an extract or remedies and they are reported in almost all culture like traditional Indian medicine system, Chinese medicine system, Unani medicine system and many more tradition based medicinal systems. As per WHO 80% of world's population till dependent on plants and herbs as a primary treatment. People also use herbs as a nutraceuticals, spices and food. Even in present, western medicine and most of synthetic compounds still derived from natural plant source [10]. More than 50,000 different spices of plants have been directly or indirectly used for medicinal purpose and traditional medicinal plants also have great importance in discovery of newer and safer drugs.

No	Latin name of plant	Common name	Family	Part used	Reference
1	*Acacia catechu wild*	Black catechu	Leguminoceae	Bark and stem	(11)
2	*Trigonellia foenum geraecum*	Fenugreek	Leguminoceae	Leaves	(12)
3	*Sida acuta burm f.*	Jungle menthe	Malvaceae	Leaves and root	(13)
4	*Allium Sativum L.*	Garlic	Liliaceae	Bulb	(14)
5	*Psoralea corylifolia L.*	Babchi	Leguminoceae	Seeds	(15)
6	*Adhatoda vasica* Nees	Vasaka	Acanthaceae	Aerial part	(16)
7	*Glycerrhiza glabra L.*	Licoroce	leguminoceae	Root and Leaves	(17)
8	*Ipomoea palmate*	Railroad creeper	Convolvulaceae	Arial part	(18)
9	*Tripterygium wilfordii Hook F*	Thunder god vine	celastraceae	Root and Leaves	(19)
10	*Uncaria Tomentosa*	Cat's claw	Rubiaceae	Bark	(20)
11	*Anacardium Occidentale L.*	Cashew nut	Anacardiaceae	Bark	21)
12	*Cleome gynondra*	Cat's whiskers	Cleomaceae	Whole plant	22)
13	*Solamun nigrum L.*	Black nightshade	Solanaceae	Leaf	(23)
14	*Piper longum L.*	Indian long pepper	Piperaceae	Fruits, roots	(24)
15	*Mentha Spicata L.*	Spearmint	Lamiaeceae	Whole plant	(25)
16	*Strerculia Scaphigera Wall.*	English karaya gum	Sterculiaceae	Seeds	(26)
17	*Rubia Cordifolia L.*	Indian madder	Rubiaceae	Roots	(27)
18	*Chrysanthemum indicum L.*	Chrysanthemum flower	Asreraceae	Leaves	(28)
19	*Curcuma Longa L.*	Turmeric	Zingiberaceae	Rhizome	(29)
20	*Euphorbia hetrophylla L.*	Fire plant	Euphorbiaceae	Whole plant	(30)
21	*Azadirecta indica A. Juss.*	Neem tree	Meliaceae	Leaves	(29)
22	*Embelica Officinalis Gaertn.*	Indian gooseberry	Euphorbiaceae	Leaves	(31)
23	*Boswellia serrate Roxb.*	Indian frankincense	Burseraceae	Bark	(32)
24	*Aegle Marmelos L.*	Beal	Rutaceae	Leaves	(33)
25	*Berberis aristica DC*	Citra	Berberidaceae	Stem	(34)
26	*Psidium guajova L.*	Yellow guava	Myrtaceae	Leaves	(35)
27	*Vinca rosea L.*	Chatas	Apocynaceae	Leaves	(36)
28	*Solanum indicum L.*	Poison berry	Solanacea	Root	(37)
29	*Zingiber officinalis rosc.*	Ginger	Zingiberaceae	Rhizome	(38)
30	*Barleria prionitis L*	Porcupine flower	Acanthaceae	Leaves	(39)
31	*Kalanchoe Crenata Andr.*	Dog's liver	Crassulaceae	Leaves	(40)
32	*Clerodendrum paniculatum*	Pagoda flower	Lamiaceae	Leaves	(41)
33	*Cocculus Hirsutus L. DIElS*	Jaljamni	Menispermiaceae	Leaf, Stem, Callus	(2)
34	*Enicostemma littorale*	Indian Whitehead	Gentianaceae	Whole plant, Seed, Fruit, Stem	(42)
35	*Moringa oleifera*	Drumstick	Moringaceae	Roots, Bark, Leaves, Seeds	(42)

There are lots of other medicinal plants with anti-inflammatory properties have already been reported in ancient as well as modern literature. We cannot include all of them here in this review article. But still we have included some of plants above. Many phytochemical compounds present in medicinal plants like phenolic compounds, saponins, tannins, tri-terpenoids, flavonoids, cinnamic acid are responsible for anti-inflammatory activity.

CONCLUSION

To overcome all disadvantages of modern medicine, general people move towards traditional natural medicine. There are so many reasons of avoiding modern medicine like higher cost, time and costs for clinical trials and many more and that is really necessary to bring any product to the market. Also, there are sever adverse effect associated with modern drugs and because of that most of the researchers are now looking for newer and safer drugs for all most all the disease. Traditional remedies were effective for all kind of disease in ancient time till now. Most of compounds synthesized now a days are belonging from medicinal plants. From ancient data as well as review and research articles it is clear that medicinal plants are playing important role in medicine system and it has potential to cure all the disease.

Conflict of Interest

None declared.

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