

Development and Evaluation of Herbal Formulation for Rheumatoid Arthritis: An Review

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ABSTRACT: Osteoarthritis, also known as degenerative joint disease is the most common form of Arthritis. The most common types are osteoarthritis & rheumatoid arthritis both osteoarthritis. A bio-mechanical and inflammatory disease influenced several factors such as mechanical & oxidative stress injury, age, obesity, and metabolic disease OA is characterized by joint cartilage degeneration, changes in the underlying bone, and novel factors, pro-inflammatory and pro-catabolic mediators are found localized in Synovial fluid and such as matrix metalloproteinases, are associated with cartilage degeneration. The use of herbal medicine in the treatment of RA is as old as humanity and civilization.

Keywords: Rheumatology osteoarthritis, cartilage degeneration, pro-catabolic mediators, humanity.

INTRODUCTION:

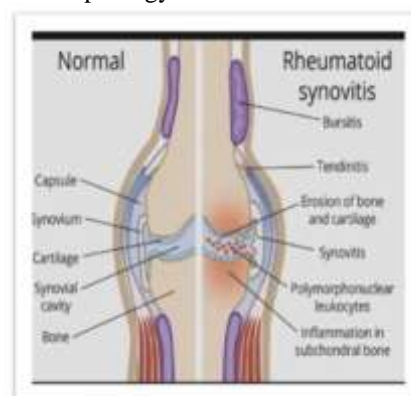
Arthritis is a common health issue that affects millions of people in the United States, with several million patients suffering from arthritis. Arthritis is a struggle with joint pain & nearly half of all adults with arthritis experience persistent pain more than 100 types of arthritis have been identified. Two of the most common types are osteoarthritis & rheumatoid arthritis. Both osteoarthritis and rheumatoid arthritis impair joint structure and function but differ in symptoms, pathophysiology, and treatment.

Pathophysiology of Rheumatoid Arthritis:

Chronic inflammatory disorder of autoimmune origin principally attacks the joints, producing a non-suppurative proliferative and inflammatory synovitis. Articular lesions distribution of the articular cartilage and in some cases causes ankylosis of the joints. Extraarticular lesions may occur in the skin, heart, blood vessels, and lungs. Causes symmetrical polyarthritis affects several joints in pairs on both sides of your body.

- Epidermiology

- Etiology
- Morphology



Features Include:

- 1) Synovial cell hyperplasia and proliferation.
- 2) Dense inflammatory infiltrates of CD4 + helper T cells, B cells, plasma cells, dendritic cells, and macrophages.
- 3) Increased vascularity resulting from angiogenesis.
- 4) Neutrophilic aggregates of organizing fibrin on the synovial and joint surfaces.
- 5) Osteoclastic activity in underlying bone, allowing the home synovium to penetrate into the causing periarticular erosions and subchondral cysts.

Herbs used in Rheumatoid Arthritis:

1) Ginger:

Synonym :- Gingerin, Rhizoma Zingiberis, Zingiber, Ginger officinale.

Family :- Zingiberaceae

Biological source:-The ginger is the rhizomes of zingiber officinale Roscoe & dried in the Sun



Chemical constituent: Ginger exhibit a vital role to lessen the unbearable pain & inflammation associated with. RA ginger is obtained from rhizomes. It has been widely used as a medicinal herb & spice. since ancient times. Anti-inflammatory effect of ginger was scientifically proved first by kiuchi in 1982. They isolated four new different compounds from ginger, and all showed the potential inhibitory effect to reduce prostaglandin synthesis, which is the key to Inflammation. Active components include gingeals, gingerdials and gingerdions and their dehydration products The shagaols. officinale black inflammatory prostaglandins and thromboxane.

2) Turmeric:

Synonyms :- Saffeen, Indian Haldi, curcuma Rhizoma

Biological Source:-Turmeric is the dried rhizome of curcuma longa Linn.

Family:- Zingiberaceae



Chemical constituents: Turmeric contains yellow coloring matter called as acuminoida (s) and essential oil (6x). The chief constituent of the coloring matter is curcumin I (607), addition with small quantities of curcumin, T Curarmin I and date Curcumin The volatile oil contains mono- and sesquiterpenes like Zingiberene arturmerone Beeneel and cineole choleric action of the essential oil is attributed to p-tolylmethyl cinnel.

3) Nirgundi:

Synonym: Chaste tree, man ching, Negundo, lengund..

Family:- Lamiaceae.

Biological Source: It is obtained from the leaves of plant Vitex Negunda.



Chemical constituents: Carbohydrates, sterols, C-glycosides, Flavonoids, Polyphenolic compounds, terpenoids, glycosidiaridoids & alkaloids, Casticin, Essential oil, Benzoic acids, vitamin-C, Flavones; 3P-Acetyroylean-12-en-27-oic acid, 2 α ,3 α -diacetoxyolean-5,12-dien-28-oic acid; 2 β , 3 α -dihydroxyolean-5,12-dien-12-28-oic acid & 2 α ,3 β -diacetoxy-18-hydroxyolean-5,12-dien-28-oic acid isolated from seeds. It is a hardy plant, flourishing mainly in the Indian region. It has analgesic, anti-bacterial and anti-inflammatory properties. It is useful in the treatment of fever, arthritis, headaches, swelling, digestion problems and mouth related problems. The Sub-effective dose of Nirgundi potentiated.

4) Gokshur Churna:

Synonym: Bada Gokhru (Big Gokhru) and Chota Gokhru (Small Gokhru), Brihat gokshur (Sanskrit), Bada goshur (Hindi) Yenugu palleru (Telugu), Puncture vine, Devil's weed, Large caltrops.

Family:- Tribulus terrestris or Zygophyllaceae.

Biological Source: The smaller or Chhota Gokhru is the dried ripe seeds of Tribulus terrestris Linn.



Chemical constituents: Alkaloids 3.5%–5%, stable oil, aromatic oil, resins, glycosides, carbohydrates, saponins and triterpenoids. Stem: Saponins, herman, phytosterols, tannins and carbohydrates. Root: Reducing sugars, phenolic compounds, saponins, xanthoproteins, alkaloids, triterpenoids and flavonoids.

5) Liquorice:

Synonyms :- Sweet Liquorice, Radix alycyrrhizae.

Family: - fabaceae.

Biological Source :-Liquorice consists of subterranean peeled and unpeeled tolons Roots and stems of glycyethica glabra Linn and other species of glycythiza.Belonging to family Leguminosae.

Chemical constituent :- Glycyrrhizaglabra (liquorice) is a herb belonging to the pea and bean family, liquorice is cultivatedfor its underground stems that are used to flavour confectionery; it is also valued for its medicinal qualities. In the traditional system of medicine, the roots and rhizomes of Glycyrrhizaglabra (Family: Leguminosae) have been employed clinically for centuries for their anti-inflammatory, antiulcer, expectorant, antimicrobial and anxiolytic activities. In modern medicine, liquorice extract has been used for peptic ulcer and as an alternative to bismuth that has a protective role against acid and pepsin secretions by covering the site of lesion and promoting the mucous secretion. There are many useful compound in liquorice root such as, glycyrrhizin and its aglycone, glycyrrhetic acid wich are clinically used for hyperlipidemia. Liquorice flavonoid constituents mainly include flavones, flavonals, isoflavones, chalcones, bihydroflavones and bihydrochalcones. A pharmacological investigation indicates that they have antioxidant, antibacterial and anti-inflammatory activities.



6)Thyme:

Synonym: Thymus vulgaris.

family: Lamiaceae (mint).

Parts used: Aerial parts.

Emergetics: pungent' hot.



Plant properties: Antimicrobial, carminative,Stimulating/ relaxing diaphoretic, antispasmodic, expectorant, emmenagogue, vermifuge. plant uses: Infection, symptoms of cold and influenza (fevers sore throat, cough), UTI infections, wound, mouth wash, thyme is the most widely wed herbal medicine among patient Rheumatoid Arthritis. Thyme also has antimicrobial and anti-inflammatory properties that can be therapeutic for Rheumatoid Arthritis.

7) Cinnamon:

Synonyms :-Dalchini,ceyton cinnamon, cinnamon.

Family: lauraceae.

Biological source :- Cinnamon consists of dried bark free for the outer cook and from

underlying parenchyena, from the shape of growing on the cut stumps of cincamaruth zeylanicum Nees.

Chemical Constituent :- Essential oil Cs to 20 ml/kg) is composed of phenylpropane derivatives cinnamon ail mainly certain Cinnamaldehyde (no to 70 %) benzaldehyde Cuminaldehyde and other terpenes such phenallandeene pipene, cymene.



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