

MAGICAL EFFECT OF ETHNO MEDICINAL PLANTS USED IN CURE OF RHEUMATOID ARTHRITIS

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ABSTRACT :

Rheumatoid arthritis is chronic, progressive, disabling autoimmune disease characterized by systemic inflammation of joints, damaging cartilage and bone around the joints. It is a systemic disease which means that it can affect the whole body and internal organs such as lungs, heart and eyes. It is possible to use the herbs and plants in various forms in order to relieve the pain and inflammation in the joints. There are so many medicinal plants that have shown anti rheumatoid arthritis properties. So the plants and plant product with significant advantages are used for the treatment of rheumatoid arthritis. The present review is focused on the medicinal plants having anti rheumatoid arthritis activity.

KEYWORD: Rheumatoid arthritis, joint distortion, herbal drugs, therapeutic potential, alternative medicine.

INTRODUCTION

Rheumatoid arthritis is a systemic disease and it involve rheumatoid nodules, vasculitis, eye inflammation, cardio pulmonary disease are manifestation of the disease. Rheumatoid arthritis is not an inherited disease. Researchers believe that some people have genes that make them susceptible to the disease. People with these genes will not automatically develop rheumatoid arthritis. Rheumatoid arthritis sometimes can affect other organs of the body such as the skin, eyes, lungs and blood vessels. It is more prevalent among women than men. There is usually a "trigger," such as an infection or environmental factor, which activates the genes. When the body is exposed to this trigger, the immune system responds inappropriately. Instead of protecting the joint, the immune system begins to produce substances that attack the joint. This is what may lead to the development of rheumatoid arthritis. It is autoimmune disease which means the body's immune system mistakenly attack on healthy tissues. The normal joint lining is very thin and it has very few blood vessels in it but in the rheumatoid arthritis joints the lining is very thick and crowded with the white blood cells. The white blood cells secrete chemical substances like interleukin-1 and tumor necrosis factor alpha that produce pain, joint swelling and joint damage. Recent discoveries shows the presence of novel cytokines. These cytokines stimulate synovial fibroblasts and chondrocytes in the nearby articular cartilage to secrete enzymes that degrade proteoglycans and collagen, leading to tissue destruction in chronic arthritis. By the release of various cytokines and mediators of inflammation, the synovial starts proliferate and spreading, this is called as pannus. Fibrosis is the next stage and lead to the loss of joint mobility this stage is called as ankylosis. Difference between normal joint lining and rheumatoid joint lining In the rheumatoid arthritis the synovial membrane become thickened and cartilages are eroded. The synovial membrane invades the space between joints and the whole joint is swollen and become painful on movement. Before the discovery of synthetic drugs man was completely depends on the medicinal plants for the treatment of disease. Latest researches revealed that consumption of Amino acids and Lysine 12 mg per every 1 kg of body weight per day, available in eggs, Yogurt, Cheese, dry fruits, beans, cod fish, red meat etc., foods could be extremely beneficial for renewal of Collagen. Vitamins: Intake of foods containing rich in Vitamin 'D' and Vitamin 'C' regularly, is helpful to regenerate the cartilage of Hip and Knee joint.

RESEARCH METHODOLOGY

The present study is the outcome of an exhaustive field survey undertaken in M.P. The tribal villages of Gond, korkhu and bhil of M.P region were selected to record the plant used against rheumatoid arthritis problems. Methods were adopted by the author during the course of present investigation. Field and survey work were made after carefully planned field trips. Knowledgeable persons of tribal communities and traditional herbal healers were contacted and information was collected through interviews, observations and discussions held during field surveys. Data regarding herbal against these problems remedies were collected as per plant suggested by local community. Voucher specimens were collected from different study sites and preserved as per standard method. Special attention is paid to record information from local voids, ojhas and traditional herbal healers. The information was documented involving field study by contacting and interviewing voids and ojhas for plants used to cure this problems. The plants were identified and confirmation of the specimen was made with the help of floristic literature. (Ommachan 1977), the Flora of Madhya Pradesh Vol.-I (Verma et al., 1993) and Dictionary of Indian folk medicine and ethnobotany (Jain 1991). The study revealed that the M.P is rich in ethno medico botanical diversity. The species were identified and the voucher specimens were deposited. Medicinal herbs are enumerated with botanical name, common name, Family, plant part used, types of rheumatoid arthritis diseases in which plant used and mode of usage.

PLANT USES FOR TREATMENT OF RHEUMANOID ARTHRITIS

| S. no. | Name of plant | Chemical constituents | Uses |
|--------|------------------|---|---|
| 1. | <i>Myrobalan</i> | Arjunglucoside, trans-cinnamic acid, triethyl ester of chebulic acid, arjunic acid, arjungenin, daucosterol | In the treatment of asthma, sore throat, vomiting, hiccough, diarrhea, dysentery, bleeding piles, ulcers, and gout, heart and |

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| | | | bladder diseases. |
| 2. | <i>Black pepper</i> | Piperene, sabinene, pinene, terpene, limonene, mercene, camphene, caryophyllene, alpha-phellandrene, alpha-pinene, beta-pinene, beta-bisbolene, beta-farnesene, linalool, terpen-4-ol, thujone. | Anti-inflammatory, carminative, anti-flatulent, pyridoxine, riboflavin, thiamin and niacin. |
| 3. | <i>Ginger</i> | Gingerols, bisabolene, zingiberine, zingiberol, sesquiphellandrene, curcumen, 6-dehydrogingerone, galanolactone, ginsulphonic acid, alpha-curcumin, alpha-farnesene. | Anti-emetic, chemo-protective, anti-viral, anti-inflammatory, anti-nauseant, and anti-ulcerogenic, migraine |
| 4. | <i>Tinospora gulanha</i> | Tinocardifolin, columbin, colombine, picroretin, and tinocardifolioside, tinosponone, tinocardioside, cordioside. | Jaundice, diabetes and rheumatoid arthritis, antineoplastic, antioxidant, hepatoprotective, hypolipidemic. |
| 5. | <i>Deodar cedar</i> | Himachalene, β -himachalene, himachalol, allohimachalol, himadarol, isocentdarol and centdarol, 9-hydroxy-dodecanoic acid, ethyl laurate, ethyl stearate, 3-beta-hydroxy-oleanolic acid methyl ester, beta-sitosterol, shikimic acid, methyl coniferin. | Carminative, diaphoretic, diuretic, pulmonary and urinary disorders, rheumatism, piles, kidney stones, insomnia, diabetes etc. |
| 6. | <i>Indian bay leaf</i> | Geraniol, beta-pinene, camphene, beta-caryophyllene, cinnamaldehyde, limonene, p-cymene, alpha-pinene, eugenol. | Carminative, anti-flatulent, diuretic, anorexia, bladder disorder, coryza, nausea |
| 7. | <i>Aginbuti</i> | Hentriacontine, dotriacontanol, betulonic acid, lupeol, ellagic acid, quercetin, lawsone, β -sitosterol, ellagic acid. | Anti-arthritis, laxative, rubifacient, hypothermic, anti-inflammatory, hypertensive, antiurolithiasis, antibacterial. |
| 8. | <i>Indian mallow</i> | Stigmasterol, riboflavin, adenine, scoparone, scopoletin, p-coumaric acid, scoparone, sitosterol, syringaldehyde, thymine, vanillic acid. | Lung ailments, cold and fever, tuberculosis, bronchitis, urinary tract infection, gout, tooth ache, anti-arthritis. |
| 9. | <i>Teak</i> | Astectoquinone, 5-hydroxylapachol, tectol, betulonic acid, betulonic aldehyde, squalene, acetovanillone, e-isofuraldehyde, evofolin, syringaresinol, medioresinol, balaphonin, lariciresinol, zhebeiresinol, 1-hydroxypinoresinol | Antibacterial, anti-oxidant, anti-asthmatic, analgesic, anti-fungal, anti-tumor, anti-inflammatory. |
| 10. | <i>Shallaki</i> | Boswellic acid, p-cymene-limonene, terpinolene, bornyl acetate, p-cymene-limonene, terpinolene, bornyl acetate, β -eudesmene, α -phellandrene, γ -murolene, terpinene, valencene, s-cis-sabinol. | Inflammatory diseases, osteoarthritis, cervical spondylosis, ankylosing spondylitis. |
| 11. | <i>Bachelor's button</i> | Parthenolide, eudesmanolides, germa cranolides, guaianolides, epicainin, epoxy artemorin, 1-beta-hydroxyarbusculin, 3-beta-hydroxycostunolide. | Anticancer, cardio tonic, anti-spasmodic, anemmenagogue, anti-inflammatory activity, anti-cancer activity, migraine, eadache. |
| 12. | <i>Ram tulsi</i> | Thymol, gratissimol, pentoses, hexoses, uronic acid, eugenol, cis-ocimene, trans-ocimene, pinene, eugenol, 1,8-cineole, linalool, methyl chavicol, methyl eugenol. | Anti-nociceptive, relaxant. |
| 13. | <i>Morning glory</i> | Tetradecanyl palmitate, stigmasteryl p-hydroxycinnamate, hexadecanyl p-hydroxycinnamate, palmitate, stearic, linoleic, oleic acid, myristoleic, myristic, palmitic, nonadecanoic. | Antibacterial, anti-convulsant, anti-inflammatory, hypoglycemic, immunomodulatory, central nervous system activity. |

RESULTS AND DISCUSSION

Madhya Pradesh is one of the floristically richest regions in Central India and provides an excellent piece of rich biodiversity (Sinha 1998). In present study, some angiospermic plants species belonging to 15 families were recorded. These plants have been used for the treatment of rheumatoid arthritis diseases. However, the study revealed that certain chronic diseases like rheumatoid arthritis have effective herbal remedies (Dwivedi 1999). Whole plant of herbs and leaves are more effective than other parts. The most commonly used plants were members of Asteraceae, Acanthaceae, Solanaceae, Fabaceae, Amaranthaceae,

Asclepiadaceae, Euphorbiaceae and **Zingiberaceae**. Some common plants used against rheumatoid arthritis are illustrated. Various secondary metabolites have been reported to be present in these members (**Dwivedi et al., 2007c**). This could be helpful in creating mass awareness mainly for small and marginal farmers, so that they can take up medicinal plants for cultivation and also in the promotion of traditional knowledge within the region. The preservation and enrichment of the gene bank of such economically important species are needed before they are lost forever.

Special Diet being Prescribed by the local village vidyas for Development of Synovial Fluid and Cartilage in the Bone joints

- *Setaria italica*/ Fox millets. Family. Poaceae, Local name: Korraluand
- *Triticum dicoccum*/ wheat. Family. Poaceae, Local name: Godhumalu, seeds of Godhumalu and korralu are made
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- *Triticum dicoccum*/wheat family-poaceae local name-godhumallu seeds of it are made into rewa (broken into small pieces) cooked and to be eaten daily in place of Rice/pulka.
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- *Eleusine coracana*/ Finger millet. Family: Poaceae, Local name: Ragi. Ragi seeds powder is cooked with water
- *Sorghum bicolor*/Great millet, Family: Poaceae. Local name
- *Vigna mungo*/Black gram, Family: Fabaceae. Local name: Minumulu. Seeds are soaked in water, grinded into Paste roasted in gingely oil- olive oil and vadas are prepared and consumed daily. Or seeds are to be fried in ghee, powdered, mixed with cow ghee and jaggery powder made into round balls called 'Sunni vundalu' (each weighing about 20 grams) and eaten daily.
- *Vigna mungo*/Black gram, Family: Fabaceae. Local name: Minumulu. Seeds are soaked in water, grinded into
- *Sesamum indicum*/Gingelly seed, Family: Pedaliaceae, Local name: Nuvvulu. Nuvvulu seeds are to be powdered and to be mixed with pure jaggery and to be eaten daily. Egg white yolk 2 nos. are to be consumed / swallowed in *Sesamum indicum*/Gingelly seed, Family: Pedaliaceae, Local name: Nuvvulu. Nuvvulu seeds are to be powdered raw along with jaggery daily followed by intake of one glass of cow milk mixed with one to two grams of Gomuthra Shilajith.

The above 3 items each weighing 100 grams each are to be made into juice by adding adequate water and to be

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- *Abelmoschus esculanthus* /Ladies finger. Family: Malvaceae, Local name: Bhendi is to be consumed daily.
- *Piper betle*/Betel leaves, Family: Piperaceae. Local name: Tamala paku: Betel leaves 3 to 4 nos are to be chewed

CONCLUSION

The review study on the ethno medicinal plants used rheumatoid arthritis in M.P, India gives a brief description about the plants and their uses. In India people are having their own knowledge of traditional herbal medicines to cure different diseases. The utilization of herbal traditional medicines has the less risk of side effects and is cost effective for which they are widely used among the people as herbal plants represent effective conventional drugs for the treatment of arthritis. It is found that a number of plant species are having the potential to cure arthritis available in India. The most of plant species utilized for curing rheumatoid arthritis belonging to Acanthaceae. The present study highlights the importance of plants as a medicinal agent to cure diseases and disorders. It also brings attention towards future herbal formulation against rheumatoid arthritis.

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