
Most Potent Herbal Remedy for Arthritis

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ABSTRACT

India indeed has a rich history and tradition in the field of medicine, particularly in Ayurveda. Ayurvedic medicine has been gaining popularity in recent years due to its effectiveness in treating various diseases, including autoimmune disorders like rheumatoid arthritis. The combination of herbal drugs such as ashwagandha, safed musli, mahayogiraj guggul, and maharasandi kwath has been clinically proven to have anti-inflammatory, analgesic, and anti-arthritic activities when used alone. Combining these potent herbs can provide a powerful treatment for rheumatoid arthritis. It is important to note that inflammation can occur due to physical injury or faulty metabolism of the body. According to Ayurveda, faulty metabolism produces Aam or toxins that lead to an imbalance in the body's three main pillars - vata, pitta, and kapha. ROS, or Reactive Oxygen Species, are highly unstable compounds that play a role in the progression of inflammatory disorders. The body's complex antioxidant defense system normally controls ROS levels, but overproduction of ROS and/or inadequate antioxidant defense can lead to oxidative stress and result in several clinical disorders. Therefore, it is important to maintain a healthy lifestyle, including a balanced diet and stress management, to prevent the buildup of toxins and maintain a healthy antioxidant defense system.

Keywords: Rheumatoid arthritis; Safed Musli; ashwagandha; mahayogiraj guggul; green tea; Boswellia spp.

1. INTRODUCTION

Plants have been a valuable source of medicine for centuries. Many commonly used drugs today are derived from plants or contain active compounds extracted from plants. However, it is important to note that even natural or home-grown drugs can have side effects and may not be entirely safe for everyone. However, it is crucial to ensure the safety and efficacy of any new drug or plant product before it is used on humans [1]. The World Health Organization (WHO) and regulatory authorities in developed countries have guidelines and regulations in

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place to ensure that new drugs, including those derived from plants, undergo rigorous testing for safety and efficacy. The specific polyherbal combination you mentioned, consisting of powders of *Withania somnifera* (Ashwagandha), mahayogiraj guggul, Safed Musli, and maharasandi kwath, is believed to have calming, pain-relieving, and anti-inflammatory properties for joint health. While these individual herbs are known to possess certain medicinal properties, it is important to note that the efficacy and safety of polyherbal combinations can vary [2,3]. It is important to strike a balance between the potential benefits and risks associated with any form of treatment, whether natural or conventional. When there is an overproduction of ROS or a deficiency in the body's antioxidant defense mechanisms, this balance is disrupted, leading to a surge in ROS and oxidative stress. Oxidative stress refers to an imbalance between the production of ROS and the body's ability to detoxify them, resulting in cellular damage.

The inadequate functioning of the body's natural antioxidant defense mechanisms has been implicated as a causative or contributing factor in several clinical disorders. Oxidative stress has been associated with various health conditions such as cardiovascular diseases, neurodegenerative disorders, and inflammatory conditions. This review briefly highlights a piece of art and the available modern treatments for RA-related discomfort and challenges. Recently, Stolen et al. issued a complete audit [4]. A fast-dispersible tablet system is a dosage form for oral administration that quickly dissolves in the mouth and can be ingested in the form of liquid. This formulation has recently gained popularity as a novel medication delivery method since it is simple to use and improves patient compliance [5]. To achieve therapeutic effectiveness, these herbal medications' quick dispersible pills are created for rapid & total absorption in the gastrointestinal system [6]. Children and elderly patients have trouble swallowing conventional dosage forms since they dissolve in the mouth in a matter of minutes without the use of water [7]. The minimal amount of saliva required for these formulations typically results in pill breakdown in the oral cavity [8,9]. The drug can then either be taken as a solution to be absorbed from the gastrointestinal tract, or it can be absorbed completely or partially into the systemic circulation. Super disintegrants are used as part of the fundamental strategy for creating rapidly dispersible tablets [10].

2. FEATURES OF RHEUMATOID ARTHRITIS [11]

- Symmetrical Joint Involvement
- Joint Pain and Stiffness
- Joint Deformities
- Swollen Joints
- Morning Stiffness
- Systemic Symptoms
- Extra-Articular Manifestations

3. LIST OF MOST POTENT HERBAL DRUGS USED IN ARTHRITIS

3.1 Ashwagandha (*Withania somnifera*)

Research has been done on ashwagandha for its ability to treat a variety of medical ailments. Although early studies have shown encouraging results, more study is required to confirm its effectiveness and safety in a variety of populations and circumstances. Any herbal product, including Ashwagandha, should be used with caution and after consulting a healthcare provider, particularly if you have underlying medical issues or are on medication. They may provide you with individualized guidance and assist in determining the right Ashwagandha dose and form for your particular circumstance [12].

3.2 Chemical Composition

Alkaloids (isopelletierine, ana ferine, cuseohygrine, anhydride, etc.), steroidal lactones (withanolides, withaferins), and saponins are some of the chemical components of *Withania somnifera* (WS) that are physiologically active. Ashwagandha contains acylsterylglucosides and sitoindosides, both of which are stress relievers. It has been demonstrated that active components of Ashwagandha, such as the sitoindosides VII-X and Withaferin-A, exhibit strong anti-stress action against acute forms of experimental stress. Numerous of its components promote immunomodulatory effects. 5-dihydroxy withanolide-R and withasomniferin-A were produced from *Withania somnifera*'s aerial parts.

Anti-arthritis effect: Ashwagandha has been shown to have pain-relieving properties and is believed to work by modulating the pain response of the nervous system. It is effective in reducing pain in animal studies using the hot plate method. The involvement of serotonin and not prostaglandins in the pain-relieving effect of Ashwagandha has also been suggested. It's important to emphasize that the available evidence is limited to animal studies, and further research, including well-designed clinical trials, is necessary to determine the efficacy and safety of Ashwagandha in pain management in humans [12,13].

3.3 Mahayogiraj Guggul (oleoresin of *Commiphora wightii*)

Mahayogaraja Guggulu is an Ayurvedic formulation that contains a mixture of herbal powders processed with Guggulu, the oleoresin of *Commiphora wightii*. It is commonly used for the treatment of rheumatoid arthritis (Aamavata) and other inflammatory conditions. Preclinical studies have shown it to have anti-inflammatory properties. Mahayograj Guggul contains a combination of herbs including Sunthi (*Zingiber officinale*), Amalaki (*Emblia officinalis*), Pippali (*Piper longum*), Chitraka (*Plumbago zeylanica*), Hingabharta (*Bioss*), Sarshapa (*Brassica campestris*), Chavya (*Piper retrofractum*), Ajamoda (*Trachyspermum ammi*), Swetajiraka (*Cuminum cyminum*), Indrayava (*Holarrhena antidysenterica*), Patha (*Cissampelos pareira*), Vidanga (*Embelia ribes*), Krishna jiraka (*Carum carvi*), Gajapippali (*Scindapsus officinalis*), Katuka (*Picrorhiza kurroa*), Nirgundi (*Vitex negundo*), Vacha (*Acorus calamus*), Murva tenacissima,

Haritaki (*Terminalia chebula*), Ativisa (*Aconitum heterophyllum*), Bibhitaki (*Terminalia bellirica*), Bharangi (*Clerodendrum serratum*, and, in equal proportions. The amount of Guggulu used in the formulation is equal to the total amount of all the herbs used [14,15].

3.4 Safed Musli (*Chlorophytum borivilianum*)

The limits of existing therapeutic choices include non-steroidal anti-inflammatory medications (NSAIDs) and corticosteroids, as well as the high occurrence of inflammatory joint illnesses. The use of plants and natural medicines in traditional medicine to treat inflammation and associated disorders is then highlighted. The plant *Chlorophytum borivilianum*, also called Safed Musli. This plant has saponins, which are recognized for their anti-inflammatory qualities and are utilized in traditional medicine. The use of Safed Musli and other natural medicines as alternative or supplemental treatments for inflammatory joint conditions is possible. The investigation of the anti-arthritic and antioxidant properties of an Ayurvedic formulation called Maharasnadi quash using a standardized aqueous extract. For its potential usefulness in treating arthritis and paralytic diseases, this extract is especially being researched [16-19].

3.5 Green Tea (*Camellia sinensis*)

Due to its high concentration of polyphenols, particularly a variety known as catechins, green tea has drawn interest for its possible advantages in the treatment of arthritis [20]. Antioxidant and anti-inflammatory characteristics of these polyphenols may help in the treatment of arthritic symptoms. To demonstrate green tea's effectiveness, additional study is required [21,22]. Epicatechin (EC), epigallocatechin (EGC), EC-3-O-gallate (ECG), and EGC-3-O-gallate (EGCG) are the main polyphenolic substances with a flavonoid structure in PGT [23]. In this study, we tested whether PGT can control the expense of security against joint inflammation and further examined the influence of PGT on antigen-explicit insusceptible reaction linked with the illness cycle in light of the rat adjuvant-prompted joint pain (AA) model of human RA [24]. A few clinical and histological similarities exist between AA and RA, and AA may be induced in the innate Lewis rats (RT.11) by subcutaneous (s.c.) immunization with heat-killed *Mycobacterium tuberculosis* H37Ra (Mtb). In the etiology of both AA and RA, T lymphocytes directed against the 65-kD mycobacterial heat shock protein have been generated [25].

3.6 *Boswellia* spp.

Boswellia, sometimes known as frankincense, has been used in traditional Ayurvedic medicine for a very long time. The capacity of *boswellia* to inhibit microsomal prostaglandin E2 (PGE2) synthase-1, an enzyme involved in the formation of inflammatory prostaglandins, is one of the plant's main modes of action. *Boswellia* reduces inflammation by blocking this enzyme, which helps lower the generation of PGE2. 5-lipoxygenase, an enzyme involved in the production of leukotrienes, strong inflammatory mediators, is another crucial

target of boswellia. Boswellia reduces the production of leukotrienes by blocking 5-lipoxygenase, which reduces inflammation. Additionally, it has been shown that boswellia inhibits the production or activity of several other inflammatory mediators, including cyclooxygenase-2 (COX-2), nitric oxide (NO), and matrix metalloproteinases (MMPs) including MMP-9 and MMP-13 [26]. These mediators contribute to inflammation, discomfort, and tissue breakdown in diseases like arthritis. The potential advantages of Boswellia have been investigated in knee osteoarthritis (OA). Boswellia has been found to increase knee joint space, which is the separation between the bones in the knee joint [27]. This development shows that the joint cartilage is being protected. Additionally, it has been shown that boswellia inhibits the growth of osteophytes, bone growths connected to OA. Boswellia has also been demonstrated to lower the levels of inflammatory markers that are increased in knee OA, such as C-reactive protein and hyaluronic acid. Boswellia can assist in symptom relief and disease progression by lowering these inflammatory mediators [28].

4. CONCLUSION

It is concluded that to maintain a healthy lifestyle, including a balanced diet and stress management, to prevent the buildup of toxins and maintain a healthy antioxidant defense system. The inadequate functioning of the body's natural antioxidant defense mechanisms has been implicated as a causative or contributing factor in several clinical disorders. Oxidative stress has been associated with various health conditions such as cardiovascular diseases, neurodegenerative disorders, and inflammatory conditions.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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