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EFFICACY AND SAFETY OF HERBAL MEDICINES IN THE TREATMENT OF RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS"

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ABSTRACT

Rheumatoid arthritis (RA) is a chronic autoimmune disease characterized by joint inflammation and progressive joint destruction. While conventional treatments such as nonsteroidal anti-inflammatory drugs (NSAIDs) and disease-modifying ant rheumatic drugs (DMARDs) are widely used, they may have limitations, including adverse effects and incomplete symptom control. Herbal medicines have gained attention as alternative or adjunct therapies for rheumatoid arthritis due to their potential efficacy and perceived safety. This research paper aims to review and evaluate the efficacy and safety of herbal medicines in the treatment of rheumatoid arthritis, based on available scientific evidence.

Keywords: - Treatment, Herbal, Medicine, Arthritis, Centuries.

I. INTRODUCTION

Herbal medicines have been used for centuries as a primary form of healthcare in many cultures around the world. These medicines, derived from plants and plant extracts, offer a natural and holistic approach to healing various ailments. With the growing interest in complementary and alternative medicine, herbal medicines have gained significant attention as potential treatments for a wide range of conditions, including rheumatoid arthritis (RA).

Rheumatoid arthritis is a chronic autoimmune disease characterized by persistent inflammation of the joints, leading to pain, swelling, stiffness, and progressive joint damage. Conventional treatments for RA, such as nonsteroidal anti-inflammatory drugs (NSAIDs) and disease-modifying antirheumatic drugs (DMARDs), have demonstrated efficacy in managing symptoms and slowing disease progression. However, these medications

are not without limitations, including potential adverse effects and incomplete control of symptoms for some patients.

In light of these limitations, the search for alternative therapies has led researchers and patients to explore herbal medicines as potential options for RA treatment. Herbal medicines offer the advantage of being natural and often perceived as safer than synthetic drugs. Additionally, they may possess anti-inflammatory, immunomodulatory, and analgesic properties, which could help alleviate the symptoms associated with RA.

The purpose of this research paper is to review and evaluate the efficacy and safety of herbal medicines in the treatment of rheumatoid arthritis. By examining the available scientific evidence, this paper aims to provide a comprehensive understanding of the potential benefits and risks associated with using herbal medicines as alternative or adjunct therapies for RA. Through an exploration

of traditional herbal remedies, popular herbal medicines used for RA, their mechanisms of action, and the existing clinical trials and case studies, we will assess the efficacy and safety of herbal medicines in managing the symptoms of rheumatoid arthritis. Furthermore, this paper will discuss the potential limitations and future research directions to promote a better understanding of the role of herbal medicines in the management of RA.

II. HERBAL MEDICINES FOR RHEUMATOID ARTHRITIS

Herbal medicines have been utilized for centuries in the treatment of various ailments, including rheumatoid arthritis (RA). Traditional herbal remedies and specific herbal medicines have gained attention for their potential therapeutic effects in managing RA symptoms. The following section provides an overview of some commonly used herbal medicines in the context of rheumatoid arthritis:

1. Turmeric (*Curcuma longa*):

Turmeric, a bright yellow spice commonly used in Indian cuisine, contains the active compound curcumin. Curcumin has been extensively studied for its anti-inflammatory and antioxidant properties. It has shown potential in reducing joint pain and swelling in RA. However, the bioavailability of curcumin is limited, and further research is needed to determine optimal dosages and formulations for therapeutic efficacy.

2. Boswellia (*Boswellia serrata*):

Boswellia, also known as Indian frankincense, has been used in traditional Ayurvedic medicine for its anti-inflammatory properties. The resin from the Boswellia tree contains boswellic acids, which have shown promising anti-

inflammatory effects in preclinical and clinical studies. Boswellia extracts have demonstrated potential in reducing pain, improving joint function, and decreasing markers of inflammation in RA patients.

3. Ginger (*Zingiber officinale*):

Ginger is widely recognized for its anti-inflammatory and analgesic properties. It contains various bioactive compounds, including gingerols and shogaols, which exhibit anti-inflammatory effects. Ginger extracts or supplements have shown potential in reducing pain and improving functional outcomes in RA patients. However, further research is required to establish optimal dosing and the long-term effects of ginger supplementation.

4. Green Tea (*Camellia sinensis*):

Green tea is rich in polyphenols, particularly catechins, which possess antioxidant and anti-inflammatory properties. Epigallocatechin-3-gallate (EGCG), a major catechin in green tea, has been investigated for its potential immunomodulatory effects in RA. Although limited clinical evidence is available, green tea extracts have shown some promise in reducing disease activity and joint inflammation in RA patients.

5. Devil's Claw (*Harpagophytum procumbens*):

Devil's Claw is a traditional African medicinal plant known for its anti-inflammatory properties. It contains harpagosides, which have demonstrated analgesic and anti-inflammatory effects in preclinical studies. Devil's Claw extracts have been used in RA treatment to reduce pain, stiffness, and improve physical function. However, more well-designed clinical trials are needed to confirm its efficacy and safety.

6. Cat's Claw (*Uncaria tomentosa*):

Cat's Claw, a vine native to the Amazon rainforest, has been used traditionally for its anti-inflammatory properties. It contains various compounds, including oxindole alkaloids and pentacyclic triterpenes, which possess immunomodulatory and antioxidant effects. Cat's Claw extracts have shown potential in reducing joint pain and swelling in RA. However, due to limited clinical evidence, further research is necessary.

It is important to note that while these herbal medicines show promise in managing RA symptoms, their efficacy and safety profiles may vary. Additionally, individual responses to herbal medicines can differ, and potential herb-drug interactions should be considered. It is advisable to consult with a healthcare professional before incorporating herbal medicines into RA treatment regimens to ensure appropriate usage and minimize potential risks.

III. HERBAL MEDICINES

Herbal medicines, also known as botanical medicines or phytotherapies, are medicinal preparations derived from plants and plant extracts. They have been used for centuries in traditional medicine systems across cultures worldwide. Herbal medicines encompass a wide range of substances, including leaves, flowers, stems, roots, bark, and seeds, which are utilized for their therapeutic properties.

The use of herbal medicines is based on the belief that these natural substances contain active compounds that can promote healing and restore balance within the body. These compounds may include alkaloids, flavonoids, terpenoids, phenolic

compounds, and various other phytochemicals. Herbal medicines can be prepared in different forms, such as teas, tinctures, extracts, capsules, or topical applications.

Advantages of Herbal Medicines:

1. **Holistic Approach:** Herbal medicines are often considered holistic treatments, focusing on addressing the underlying causes of illness rather than solely alleviating symptoms. They aim to support the body's natural healing processes.
2. **Traditional Knowledge:** Herbal medicines have a rich history of traditional knowledge and cultural practices. They have been used for generations and passed down through oral traditions, providing valuable insights into their uses and effects.
3. **Potential Efficacy:** Many herbal medicines have demonstrated therapeutic effects in preclinical and clinical studies. They may offer benefits in managing various health conditions, including chronic diseases such as rheumatoid arthritis, digestive disorders, respiratory ailments, and skin conditions.
4. **Perceived Safety:** Herbal medicines are often perceived as safer than synthetic drugs due to their natural origins. However, it is essential to recognize that not all herbal medicines are without risks, and appropriate usage and dosage are crucial for ensuring safety.
5. **Complementary Approach:** Herbal medicines can be used as complementary therapies alongside

conventional medical treatments. They may provide additional support, enhance treatment outcomes, or help alleviate side effects associated with conventional medications.

Limitations and Considerations:

1. **Limited Scientific Evidence:** While traditional use and anecdotal evidence support the efficacy of herbal medicines, the scientific evidence base for many herbal preparations may be limited. More rigorous research, including well-designed clinical trials, is necessary to establish their effectiveness and safety.
2. **Standardization and Quality Control:** Herbal medicines can vary in quality, potency, and composition due to variations in plant sources, growing conditions, extraction methods, and manufacturing processes. Standardization and quality control are essential to ensure consistent and reliable products.
3. **Potential Interactions:** Herbal medicines can interact with prescription medications, over-the-counter drugs, or other herbal remedies, leading to adverse effects or reduced efficacy. It is important to consult healthcare professionals to assess potential herb-drug interactions and ensure safe co-administration.
4. **Regulation and Safety:** Regulatory frameworks for herbal medicines vary between countries, and not all products undergo rigorous evaluation for safety, quality, and

efficacy. Some herbal medicines may be adulterated or contaminated, emphasizing the importance of obtaining products from reputable sources.

IV. CONCLUSION

The use of herbal medicines in the treatment of rheumatoid arthritis (RA) holds promise as an alternative or adjunct therapy. Herbal medicines offer the potential for symptom relief and improved quality of life for RA patients. However, it is important to approach their use with caution and consideration.

Based on the available scientific evidence, certain herbal medicines have demonstrated efficacy in managing RA symptoms. Turmeric, boswellia, ginger, green tea, devil's claw, and cat's claw are among the herbal medicines that have shown anti-inflammatory, immunomodulatory, and analgesic properties. These properties contribute to their potential benefits in reducing pain, swelling, and joint inflammation associated with RA.

While herbal medicines have the advantage of being perceived as natural and safe, it is crucial to recognize that their efficacy and safety profiles vary. The existing evidence is often limited, with the need for more well-designed clinical trials and larger-scale studies. Furthermore, the quality control, standardization, and regulation of herbal products need to be ensured to guarantee their safety and efficacy.

Potential adverse effects, herb-drug interactions, and the risk of contamination and adulteration should also be considered when using herbal medicines. It is advisable to consult with healthcare

professionals to assess individual needs, evaluate potential risks and benefits, and ensure appropriate usage and dosages.

In conclusion, herbal medicines offer a complementary and alternative approach in the treatment of rheumatoid arthritis. They have the potential to provide relief from symptoms and improve the overall well-being of RA patients. However, further research, standardization, and regulation are necessary to establish their efficacy, safety, and quality. Integrating traditional knowledge, scientific research, and healthcare systems can contribute to a comprehensive understanding and responsible use of herbal medicines in the management of rheumatoid arthritis.

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