

Emphasis on distinctive treatment approaches for rheumatoid arthritis in India

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Abstract

Rheumatoid arthritis (RA) is a chronic inflammatory disease of unknown etiology categorised by a symmetric, peripheral polyarthritis, that is a frequent form of chronic inflammatory arthritis and often leads to joint destruction and physical disability. Since it is a systemic disease, it can lead to additional joint manifestations, including fatigue, subcutaneous nodules, lung involvement, pericarditis, peripheral neuropathy, vasculitis, and hematologic abnormalities. The objective of treatment is to minimise joint pain and inflammation, prevent radiographic damage and visible deformity, continue of work and personal activities. Joint resuscitation is indicated for patients with severe joint damage whose symptoms are not properly controlled by medical management. The last two decades have seen significant improvements in RA results. Historical descriptions of RA are currently less frequently encountered. Much of this progression can be traced to an expanded therapeutic arsenal and early treatment intervention. The change in treatment strategy dictates a new mind-set for primary care practitioners namely, one that demands early referral of patients with inflammatory arthritis to a pre-existing rheumatologist for prompt diagnosis and initiation of therapy. Only then will patients achieve their best results.

Keywords: rheumatoid arthritis, erythrocyte sedimentation rate (ESR), Magnetic resonance imaging (MRI), synovial membrane, c-reactive protein, non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying anti-rheumatic drugs (DMARDs), janus kinase (JAK) inhibitors

Introduction

Rheumatoid Arthritis¹ is a disease of the joints with painful inflammation and can affect other organs of the body which affect the other parts of the body as well posing life-threatening complications for the patient. It can ultimately lead to bone erosion as well as joint deformity. Synovial membrane is the soft tissue present in the joints that secrete a clear viscous lubricating fluid. Besides causing joint problems, rheumatoid arthritis sometimes can affect other organs of the body such as skin, eyes, lungs and blood vessels. Around 1% of the world population is afflicted by rheumatoid arthritis, women three times more often than men. Onset is most common between the ages of 40 and 50, but occurrence may not be exactly predicted. Early rheumatoid arthritis have a tendency to affect smaller joints, particularly the proximal inter phalangeal joints. As the disease progresses, symptoms often spread to the knees, ankles, elbows, hips and shoulders. Signs and symptoms may be different based on severity and may even come and go. Over time, rheumatoid arthritis can cause joints to deform and dislocate.

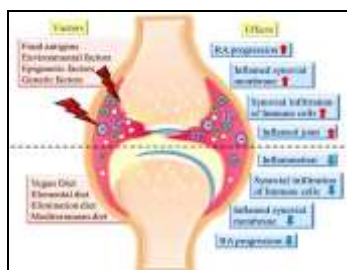


Fig 1

Investigations

Abnormal antibodies are noticeable in the blood of people with rheumatoid arthritis.

1. "Rheumatoid factor" (RF)² an antibody can be found in 80% of patients
2. Citrulline antibody (also denoted as anti-citrulline antibody, anti-cyclic citrullinated peptide antibody, and anti-CCP antibody) presence level ranges between 50%-75% in people with rheumatoid arthritis.
3. Another antibody called the "antinuclear antibody" (ANA) is also frequently found.
4. Prevalent blood tests that are required to measure the degree of inflammation in the body are Erythrocyte sedimentation rate (ESR) and C-reactive protein.

The rheumatoid factor, ANA, ESR and C-reactive protein tests can also be atypical in other systemic autoimmune and inflammatory circumstances. Hence, abnormalities in these blood tests alone are not adequate for a firm diagnosis of rheumatoid arthritis. Joint X-rays may be normal or only demonstrate swelling of soft tissues in the early stages of the disease. But as the disease progresses, X-rays can disclose bony erosions representative of rheumatoid arthritis in the joints. Periodic joint X-rays can also be helpful in monitoring the progression of disease and joint impairment over time. Techniques like, Bone scanning, performed by injecting a minor amount of radioactive substance or Magnetic Resonance Imaging (MRI) may be desirable to establish the diagnosis. The foremost complaint for which a patient seeks medical supervision is pain, swelling in and around the joints, stiffness and limited range of motion. Other tissues and organs are also involved in patients with

heart diseases, respiratory complications, sicca syndrome, gangrene etc.

Cure for Rheumatoid Arthritis ^[3]

There is no exact treatment for Rheumatoid arthritis but with early diagnosis and accordingly proper treatment it is possible to lessen the pain and disability generally associated with the disease. The quality of life can be improved to a great extent with the initiation of the right kind of treatment. Given, the chronic nature of the disease treatment has to be continuous and can almost be life-long.

Allopathic Approach

Medications for RA ^[4] usually fall into five categories: Non-steroidal anti-inflammatory drugs (NSAIDs); steroids; disease-modifying anti-rheumatic drugs (DMARDs); biologics; and Janus kinase (JAK) inhibitors.

NSAIDs: Most people with RA are advised to take a non-steroidal anti-inflammatory drug to reduce pain and inflammation. NSAIDs are sold under the names of Advil and Aleve (OTC), Mobic and Celebrex (Through prescription).

Steroids (Corticosteroids)

Fast-acting steroids, such as prednisone, are particularly useful during initial treatment. The advantage is that they can be injected directly into the joints. Injected steroids can provide pain relief targeting one or two painful joints with limited side effects.

Methotrexate and Other conventional DMARDs

Disease-modifying antirheumatic drugs (DMARDs) are used to slow or stop rheumatoid arthritis by suppressing the immune system. The generic names for commonly used DMARDs include:

- Hydroxychloroquine
- Methotrexate
- Sulfasalazine
- Azathioprine
- Lefludomide

Methotrexate is often the first drug prescribed to the people with rheumatoid arthritis. RA patients take this medication weekly, alone or in combination with other drugs.

Biologics for Rheumatoid Arthritis

Biologics fall into four categories: Tumor necrosis factor (TNF) inhibitors; Interleukin (IL) inhibitors; B-cells inhibitors; and T-cells inhibitors. These drugs are administered by injection or infusion. Examples include Remicade, Enbrel, and Humira.

Janus Kinase (JAK) Inhibitors

JAK enzymes are essential messengers of JAK enzymes in the inflammatory process of immune system. When JAK enzymes bind with other cells, called X cells, they induce inflammation. JAK inhibitors bind to JAK enzymes, which inhibit X cells and inflammatory process.

Ayurvedic Approach

A clinically resembling disease to RA was mentioned in Ayurvedic texts ^[5, 7] as amavata with comprehensive aetiopathogenesis, symptomatology complications, prognosis and treatment. Ama and Vata. Ama formed due to

disturbed functioning of agni along with vitiated vata circulates in the body and get stucked in shleshma sthanas especially synovial joints causing signs of RA. The modes of managing arthritis in India as per ayurvedic scripts include:

Choorna Kizhi is one of the most efficient ayurvedic treatments for arthritis, rheumatoid arthritis, osteoarthritis and spondylosis. A mixture of natural herbs is gently applied over the body till the person sweats substantially. This treatment is accompanied by keeping the patient in dissimilar positions like sitting, supine, left lateral and right lateral position.

In "Njavara Kizhi" a medicinal decoction will be made by cooking njavara rice in milk, four bundles will be made which are dipped in the decoction, and uses the other four for massaging.

Pizhichil involves bathing whole body in courses of lukewarm medicated oil with simultaneous soft massage. It protects the body from illness and builds up immunity.

Virechana therapy is induced purgation by administering increased doses of medicated ghee. The vitiated vatas will be collected in the abdomen removed through anal route.

Abhyanga is a full body massage with medicated oil that lubricates the joints and minimises pain due to arthritis joint inflammation. It helps in strengthening the muscle supporting joints.

Vasti: Vasti treatment embraces oil enemas or decoction enemas to eliminate toxins and Vata dosha from the body.

Upanaham is the application of medicinal paste over arthritis joints

Approach According To Siddha System ^[8, 9]

Siddha, the traditional system of medicine is widely practiced in the Tamil Nadu and the concept pertaining to drug constituents from Plant (Mooligai/Thavaram), Mineral (Thathu), Metals and Animal (Jeevam) origin. Arthritis is categorized as Vali or Vadha noikal in the ancient literature of Siddha. Numerous compound formulations and single drugs were documented for the treatment of diverse forms of Vali noikal. In the last decade, clinical studies have increased and demonstrated the efficacy of Siddha system of medicine in the treatment of Arthritis. The signs and symptoms of Rheumatoid arthritis resemble two diseases Uthiravatha suronitham and Vazhi azhal keel vayu mentioned in siddha literature. Uthiravatha Suronitham as per siddhar Yugi muni is principally a Vatha disease which arises due to irrationality of Vatha humour. Unlike other vatha diseases, along with Vatha humour, pitha humour (azhal kuttram) also increases in this disease. Pain, swelling in smaller joints, mental distress, depression and loss of appetite will be the symptoms. Similarly, vazhi azhal keelvayu as scripted in samabathy kayedu occurs due to the derangement of vatha and pitha humour and symptoms associated will be abdominal discomfort, regurgitation of food, sleeplessness, fever and pricking pain, redness, swelling and burning sensation in joints mainly wrist joint, ankle joint and interphalangeal joints. It is clear from the above descriptions that Rheumatoid arthritis occurs due to the imbalance of vatha and pitha humours.

Management: Treatment is mainly aimed at harmonising the pre-eminent humours (mukuttram), vatham and pitham through purgation and medication. The physical ingredients (udal thathukkal) rejuvenates through dieting. To regularize

vatha kuttram purgatives will be given. Agathiyar kulambu, Vellai ennai, Castor oil, Kodasuri tablet, Sanjeevi tablet, Maantha ennai are the commonly used purgatives. The type of purgative and the medium (vehicle) in which it should be prescribed is decided by the siddha physician taking in to consideration the body constitution of the patient, severity of the disease and other factors.

Prevention and diet

As per siddha concept, RA is associated with increase of vatham. Avoiding food stuffs which tends to do that can prevent the onset of the disease and to prevent recurrence of the disease.

Unani Approach

A read aloud in spite of progression in the treatment of Wajaul Mafasil¹⁰ (rheumatoid arthritis) there is no cure as per contemporary system of medicine, Recent studies revealed that early diagnosis and appropriate management reduces the consequences associated with rheumatoid arthritis.

Management: The Unani literature and classic text books have detailed information regarding the disease and its management. As per Unani philosophy below mentioned modes of treatment are advised for complete relief according to the preference

1. Dieto therapy (Ilaj bil ghiza)
2. Regimental therapy (Ilaj bil tadbeer)
3. Pharmaco therapy (Ilaj bil dawa)
4. Surgery (Ilaj bil yad)

Prime consideration is given to Regimental therapy accompanied by dieto therapy. If it does not show results then it is necessary to shift to pharmacotherapy. Surgery is the final intervention used. The regimental therapies comprise, fomentation, massage, leeching, cupping, turkish bath, diaphoresis, concoction and purgation as per necessity of the condition. All these therapies alone and collectively given outstanding results in controlling the symptoms and in the wellbeing of patient.

Naturopathic Approach ^[11]

Anti-Inflammatory Diet: Uniting defined nutrients and supplements with modern medicine are beneficial for RA. These help to ease some of the arthritic symptoms and help prevent disease progression. An anti-inflammatory diet excludes foods that contribute to swelling and inflammation such as refined grains, fried foods, fatty and processed meats, and soda, here are some:

SAME: S-adenosylmethionine (SAME) is a most abundant molecule found in the body. It has analgesic, anti-inflammatory properties, and may stimulate cartilage growth. Results of meta-analysis established that SAME dropped pain levels and enhanced mobility in people with osteoarthritis as efficiently as nonsteroidal anti-inflammatory drugs.

Capsaicin: It is a heat-producing active ingredient in chilly peppers that have an ease to reduce arthritis-related pain by enhancing the release and depletion of a pain transmitter called substance P.

Curcumin: It is an active ingredient in turmeric that works by blocking the substances causing inflammation and reducing cartilage damage. It may offer relief by reducing

pain signals in the body. Referring to a 2016 animal study, curcumin may slow the progression of osteoarthritis and reduce related pain. In the study, researchers gave oral or topical curcumin for eight weeks. Topical application had the greatest effect on pain and helped to improve cartilage function.

Fish oil: The omega-3s in fish oil improves symptoms of RA by blocking substances that cause inflammation and converting them into anti-inflammatory chemicals. It also diminishes pain and joint tenderness. A 2017 meta-analysis provided evidence that marine oil supplements reduced pain and inflammation in people with RA. As it contains high levels of EPA and DHA, capable of producing anti-inflammatory effects.

Vitamin C: Ascorbic acid is thought to prevent inflammation and maintain healthy joints. It also helps to form and maintain connective tissue. A 2011 study unveiled positive results of vitamin C.

Vitamin D: Researchers in a 2017 study found that vitamin D deficiency is common in people with rheumatoid arthritis. The study involved people from 13 diverse countries. People with depressed levels of vitamin D had more disease activity and lower quality of life. Keeping vitamin D levels normal might help avert inflammation and disease advancement.

Vitamin E: It acts as an antioxidant and reduces pain and inflammation, making it useful in the treatment of arthritis. A 2013 animal study showed the ability of vitamin E to decrease inflammation and pain in dogs with induced RA.

Calcium: Calcium prevents osteoporosis, thereby maintaining healthy joints and bones. This is vital for people with rheumatoid arthritis, as they have an increased risk of developing osteoporosis. Investigators in a 2017 study stated that both calcium and vitamin D supplementation are beneficial for healthy musculoskeletal aging. Taking these two supplements together can reduce your risk of fracture.

Exercise: Gentle exercise is proven to be a chief factor in preventing and treating rheumatoid arthritis. RA symptoms are worsened by inactivity the bones become very stiff and painful to move. Some exercises like yoga, tai chi, walking, and bicycling that are easy on your body and may provide symptom relief. This was documented as a gentle and effective way to treat symptoms of RA.

Supplementation with Omega-3: Omega-3 fatty acids have become enormously popular over the past decade due to their potency and proven health benefits. They play a vital role in supporting your immune system and preventing/treating autoimmune disorders, in addition to reducing inflammation. Additionally, omega-3 fats are important for the health of your brain, heart, and lungs – organs often affected by rheumatoid arthritis.

Other natural treatment options Hot and cold therapy

Heat recovers circulation and flexibility and allows for more ease of movement. Heat treatments may include:

- warm showers or baths
- heating pad or hot water bottle applied for up to 20 minutes
- disposable heat patches or belts
- whirlpool or hot tub
- sauna
- hot paraffin wax treatment

Cold slows circulation, drops swelling, and dulls pain by numbing nerve endings. Applying ice wrap, cold gel pack, or a bag of frozen vegetables in a towel both can cause skin damage.

Massage: A moderate-pressure massage can help:

- improve joint function
- relieve both short- and long-term pain and tension
- reduce anxiety
- improve sleep

Aromatherapy: Aromatherapy uses essential oils to generate positive mental and physical changes. Using of essential oils during bath, diluted in massage oil, or inhaled through a diffuser. The scent of the oils can help:

- reduces pain and anxiety
- boosts up energy levels
- aids in relaxation

Essential oils often used for relief from arthritic effects are

- ginger
- clove
- camphor
- bergamot
- lavender
- clary sage marjoram
- frankincense
- eucalyptus
- geranium

Acupuncture: Acupuncture ^[12] can, reduces RA-related pain, just as it does with other types of pain, through the stimulation of endorphin production. It is not to be used as a sole treatment for RA, but as an additional treatment, in conjunction with disease-modifying medications. It acts as a tool to combat pain with minimal side effects, which can be undertaken along with medication treatment.

Acupressure

Acupressure practitioners use their fingers, palms, elbows or feet, or special devices to apply pressure to acupoints on the body's meridians. Occasionally, acupressure also implicates stretching or acupressure massage, as well as other methods.

The goal of acupressure or other types of Asian bodywork is to restore health and balance to the body's channels of energy and to regulate opposing forces of yin (negative energy) and yang (positive energy). Scientists conclude that acupuncture in combination with a special herbal formula produces positive patient outcomes for rheumatoid arthritis sufferers. The acupuncture combined with herbal medicine group had an overall effective rate of 95.08% and the drug group had an effective rate of 68.85%. The researchers concluded that acupuncture with herbs is safer and more effective than NSAIDs combined with methotrexate.

Reflexology as A Treatment Option for Ra: Reflexology helps to balance all the systems of the body. Autoimmune conditions generally benefit from reflexology¹³. Stress will be reduced considerably especially the adrenals if worked out properly can give miraculous results. The detox process enabled by touch therapy can bring about restful sleep and

hence help to recover from the symptoms that create problems for the patient. The more the circulation the better the chances of the flow of the blood and in lymphatic vessels the more it is able to get rid the body of its toxins which helps the body to shake off the fetters of the disease. Reflexology helps to detox better, the heart, lungs, endocrine system etc. All the organs of the body works to its efficient best, all thanks to reflexology. Just by pressing the reflex button between the thumb of the forefinger and thumb. A press and squeeze motion also a pinching motion for about a minute or two minutes make it work efficiently.

Conclusion

RA is a common disease with extensive focal joint destruction and secondary complications to systemic inflammation. Recent treatment options based on a better understanding of the disease pathology have led to enormous changes in the management of the disease. Understanding these allows the physician for optimal patient care in both medical and surgical care.

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