

# Tuberculosis Arthritis and its Treatment

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## DESCRIPTION

Rheumatoid Arthritis (RA) is autoimmune condition that's well characterized by the inflammation in the synovial membrane of the affected joints (which in turn implies pain, redness, swelling and a loss of functioning of that part). In this case, the immune system fails to identify its own cells/tissues and attacks the immune system by creating antibodies. Failure of the immune system's ability leads to the destruction, causing severe damage. The cause for different types of arthritis varies. Bacterial agents and viral species like mycobacterium, Epstein-Barr virus, retroviruses and parvovirus B19, etc. can trigger Rheumatoid Arthritis (RA) and due to the deposition of their secretions in the synovial tissue that surrounds the joints. One such case is tuberculosis arthritis in which the species, *Mycobacterium tuberculosis* enters into the host through droplet infection. When tuberculosis occurs in lungs, it is termed as extra-pulmonary TB and if it affects the joints, it is said to be known as tuberculosis arthritis.

Once the bacterium infects a healthy person, it enters into the blood stream, initially causing inflammation and pain. But as the disease progresses, it deteriorates the condition making the joints to lose their capability to function and also might make the host susceptible to other bacterial species such as *Staphylococcus aureus* resulting in other complications.

Types of RA due to bacterial and viral species:

- TB arthritis
- Septic arthritis
- Osteoarticular tuberculosis
- Prosthetic infection
- Purulent arthritis
- Pyogenic arthritis

## Diagnosis

To diagnose rheumatoid arthritis, a physician will generally take over the following:

- A full medical history, including any family history of rheumatoid arthritis

- Discussion of current symptoms (patient history from the beginning of the disease)
- Physical assessment of the joints, skin, and muscle strength
- X-rays and/or MRI scanning
- Blood tests-The blood tests measure amount or concentration of proteins and antibodies (including a protein called Rheumatoid Factor (RF)).

Apart for general diagnosis which is performed to detect Rh factor, diagnosis for RA that arises through bacterial agents involves, MRI, PCR technique for the detection of *Mycobacterium tuberculosis* species, rheumatology and scintigraphy tests. The rest of the tests have been listed below:

- Tuberculin skin test (PPD)-To check the presence of *Mycobacterium tuberculosis* species.
- Imaging tests-Chest X-ray, CT scan, joint X-ray and MRI can detect the disease.
- Biopsy-Sample of synovial liquid is collected and tested for the presence of bacilli. Presence of granulomas ensures the disease.

## Treatment

It is equally important to administer drugs along with the drug regimen of Rheumatoid Arthritis (RA). To manage rheumatoid arthritis, Non-Steroid Anti-Inflammatory Medicines (NSAIDs) or corticosteroids are preferred, which helps to reduce pain and inflammation. Additionally the treatment for TB arthritis, a combination of isoniazid, rifampicin, pyrazinamide and ethambutol for 6 months course is to be followed. Disease Modifying Antirheumatic Medicines (DMARDs) which treat moderate to severe rheumatoid arthritis, decreasing the progression of RA and helping to reduce further damage can be beneficial. These specified drugs work more effectively when given together with a non-biologic. Disease Modifying Antirheumatic Medicines (DMARDs) which has similar functioning such as methotrexate. Sometimes surgery might be required to drain spinal abscesses. However, the medication might sometimes show adverse effects like jaundice, blurred vision, and burning sensation in foot. So, these effects can be controlled by following a balanced diet to recover from this condition.

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## CONCLUSION

Rheumatoid Arthritis (RA) increases the risk of infections and for the infections that arise due to bacteria and virus requires immunosuppressive therapy. Treatment with proinflammatory cytokines can also be followed in order to control *Mycobacterium tuberculosis* infection is crucial. Such therapies can help to reduce

joints damage. Though the administration of BCG vaccination is risky, it has to be followed mandatorily by taking proper cautionary advices to eradicate the disease. Additionally, appropriate rest and regular exercise along with patient education including supporting programs and awareness can be useful for the management of the disease.