Management of Rheumatoid Arthritis and its Effect on Quality of Life : A Literature Review

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Abstract

Rheumatoid Arthritis (RA) is an autoimmune disease that causes inflammation in the joints. In RA, the patient's physical function is restricted, and there are also physical impairment and pain. The purpose of this literature review is to ascertain how RA is managed and how RA affects a patient's quality of life.

Keywords: Rheumatoid Arthritis, Management, Quality of Life

1. Definition

Rheumatoid arthritis (RA) is a systemic inflammatory disorder that primarily affects the joints. RA has sizable societal effects in terms of medical costs, disability, and lost productivity [10]. RA can induce systemic symptoms in addition to attacks on the joints. Extra-articular manifestations also can be shown in RA patients such as rheumatoid nodules, vasculitis, pleuropulmonary, neurological, digestive, cardiovascular, cutaneous, haematological, and ophthalmic problems [6].

2. Management

In the treatment of RA, pharmacotherapy takes precedence in RA treatment. The introduction of biological therapies as a key component of pharmacological treatment has marked a significant advancement in the treatment of RA. And nonpharmacological therapies are providing support [19]. Rehabilitation programs such as physical exercise (muscle strengthening exercises), physical therapy (such as the use of low-power lasers), and psychological therapy (relaxation therapy) can be recommended individually adjusted based on existing disease conditions and comorbidities of the patient. Based on research conducted by [17], it was found that RA patients who were given a rehabilitation program showed a significant reduction in pain and physical discomfort compared to RA patients who were not given a rehabilitation program.

2.1 Pharmacological Therapy

2.1.1 Disease Modifying Anti-Rheumatic Drugs (DMARDs)

DMARDs have the potential to reduce joint damage, maintain joint integrity and function and ultimately increase the productivity of RA patients. Drugs that are often used in the treatment of RA are methotrexate, sulfasalazine, leflunomide, chloroquine, cyclosporine, and azathioprine. DMARDs administration can be given alone or in combination. In patients who do not respond or respond minimally to DMARD treatment at the optimal dose and time, additional DMARDs treatment is given or replaced with another type of DMARD [16].

Although there are names of DMARD that can be used to treat RA, methotrexate is the most commonly used as an initial treatment. Treatment for RA is difficult, with several factors impacting decision making, including disease activity and severity, comorbidities, and patient preference. Research shows that fixed drug combination between a biologic DMARD and conventional DMARD such as methotrexate surpasses a single agent drug for RA treatment. Treatment goals must include achieving remission or low disease activity while preventing radiographic progression of the illness [4].

2.1.2 Non-Steroid Anti-Inflammatory Drugs (NSAIDs)

The use of NSAIDs in RA aims to reduce musculoskeletal pain in both chronic and acute conditions. NSAIDs are administered at the lowest possible effective dose in the shortest possible time. NSAIDs do not affect the course of the disease or prevent joint damage). NSAIDs work by blocking the production of prostaglandins through the inhibition of the cyclooxygenase (COX) enzyme. The COX enzyme has two isoforms namely COX-1 and COX-2 which have different distributions and regulations. The resistance given by NSAIDs to each isoform will have a different effect. The side effects of NSAIDs need to be watched out for, especially in the kidney, liver, and cardiovascular, especially since the prevalence of RA is more in old age [8].

2.1.3 Corticosteroids

Low or moderate doses of oral corticosteroids can be part of the treatment of RA, but they should be avoided with NSAIDs pending the therapeutic effects of DMARDs. Corticosteroids in the treatment of RA are given at low doses of prednisone equivalent to <7.5 mg daily or moderate doses of 7.5-30 mg daily. During the use of corticosteroids, attention must be paid to the side effects they can cause such as hypertension, fluid retention, hyperglycemia, osteoporosis, cataracts, and the possibility of early atherosclerosis [16].

2.2 Rehabilitation Teraphy

2.2.1 Aerobic Physical Exercise

Aerobic exercise can be combined with muscle strengthening exercises (limited or generalized region), and exercises for flexibility, coordination, and dexterity of the hands and body [14]. Exercise can be given with the aim of increasing muscle strength and aerobic capacity, increasing or maintaining range of motion (ROM), flexibility, and balance. The benefits of exercise programs and physical activity are shown by the positive effects of dynamic training programs (aerobic and/or resistance training) on aerobic capacity, muscle strength, functional ability, pain relief, and quality of life [15].

2.2.2 Electrical Stimulation

Physical therapy using electrical stimulation effectively reduces pain in the short term [16]. Electrical stimulation (ES) and also known as neuromuscular electrical stimulation (NMES) and transcutaneous electrical stimulation (TENS) involves using electrical currents to stimulate the nerves or nerve endings that innervate the muscles under the skin. Electrical stimulation can be applied superficially to the skin (transcutaneous) or directly to a muscle or muscles (intramuscularly) for the primary purpose of improving muscle function. The basic theoretical premise is that if a peripheral nerve can be stimulated, the resulting excitatory impulse will be transmitted along the nerve to the motor

endplates in the muscle, resulting in muscle contraction. Neuromuscular stimulation (NMES) is one of the applications of electrical stimulation used in movement rehabilitation. NMES can increase patient participation in functional activities by reducing distractions. NMES can be used to increase muscle strength, correct shoulder subluxations (dislocations), reduce muscle tone, and generate movement. Functional electrical stimulation (FES) is a subtype of NMES in which stimulation assists functional and purposeful movements achieved by applying electrical stimulation to muscles which, when contracted, produce functionally usable movements [3][12]. According to previous studies, it was found that there was an increase in hand grip strength after using TENS every day for 15 days [10] and a decrease in pain after using TENS once a week for three weeks [1].

2.2.3 Low-Level Laser Therapy (LLLT)

LLLT is a non-invasive therapy that produces a single wave of light and produces no heat, sound or vibration. LLLT is believed to affect how the connective tissue cells (fibroblasts) operate, speed up the healing process of the connective tissue and function as an anti-inflammatory. The advantages of LLLT for RA may be seen after undergoing treatment for at least four weeks, and it has an impact on lowering morning stiffness and joint discomfort [5]. It was also demonstrated in research done in 2021 that LLLT can result in significant but constrained improvements in the patient's comorbid disorders [7].

2.2.4 Thermotherapy

Thermotherapy includes cryotherapy (applying cold temperatures using cold compresses, ice massage, cold air, bathing with cold water), superficial heat (hot compresses, paraffin baths, infrared), and deep heat (ultrasound, electromagnetic waveforms) [18]. Heat therapy (superficial or deep heat) can increase skin and joint temperature, and increase the viscoelastic properties of collagen. Clinically, these two effects can relieve joint and soft tissue stiffness, and thereby increase the efficacy of stretching [9].

The effects of cold therapy are to reduce skin and joint temperature, reduce joint swelling and the number of cells in the synovial fluid, reduce synovial metabolic demands, and inhibit collagenase activity. Therefore, thermotherapy can provide pain relief and reduce inflammation in patients with acute arthritis [9].

3. RA Effect on Quality of Life

Quality of life is a new concept that needs to pay more attention to the patient's health problems. Quality of life is concerned with the patient's position in life which is influenced by the cultural context and norms in which they live and in relation to their goals, expectations, standards, and concerns [15]. RA is an autoimmune disease, and autoantibodies such as rheumatoid factor and anti-cyclic citrullinated peptide (CCP) antibodies are involved in the onset of the disease. In its early stages, synovitis, bilateral joint swelling, and pain occur in the small joints. As the condition progresses, the joints become deformed, and the inflamed areas spread to the wrists, knees, elbows, shoulders, etc., and this joint damage has a significant impact on the patient's daily life [2].

4. Conclusions

Based on the symptoms felt by patients such as increased pain in the joints of the hands, fatigue, and depression, RA can reduce the patient's quality of life because sufferers are unable to work due to unsupportive physical conditions.

5. References

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