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IMPACT OF A PHARMACEUTICAL CARE SERVICE OFFERED TO PATIENTS SUFFERING RHEUMATOID ARTHRITIS WITHIN AN AMBULATORY SETTING

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ABSTRACT

The objectives of the study were to evaluate the impact of a newly developed pharmaceutical care services directed to patients with rheumatoid arthritis attending an out-patient setting. A total of 54 patients participated in the study and were randomly divided into two equal groups, Group A and Group B. The study was carried out over three phases. In phase 1, Group A patients were assessed and offered a pharmaceutical care session. Group B patients were assessed but no pharmaceutical care session was delivered. At phase 2, group A patients were re-assessed. Group B patients were re-assessed a second time and a pharmaceutical care session was offered to Group B patients. At phase 3 both groups were re-assessed a third time. The newly developed individualized pharmaceutical care service provided by the pharmacist led to an improved quality of life as measured by the health-related quality of life questionnaires.

KEYWORDS: pharmaceutical care, quality of life, rheumatism, rheumatoid arthritis, drug therapy problems, pharmacist contribution.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease that primarily involves the joints. RA causes damage mediated by cytokines, chemokines, and metalloproteases. Characteristically, peripheral joints (eg, wrists, metacarpophalangeal joints) are symmetrically inflamed, leading to progressive destruction of articular structures, usually accompanied by systemic symptoms. Diagnosis is based on specific clinical, laboratory, and imaging features. Treatment involves drugs, physical measures, and sometimes surgery. Disease-modifying antirheumatic drugs help control symptoms and slow disease progression.

RA affects about 1% of the population. Women are affected 2 to 3 times more often than men. Onset may be at any age, most often between 35 years and 50 years, but can be during childhood.

Although rheumatoid arthritis (RA) involves autoimmune reactions, the precise cause is unknown; many factors may contribute. A genetic predisposition has been identified and, in white populations, localized to a shared epitope in the HLA-DRB1 locus of class II histocompatibility antigens. Unknown or unconfirmed environmental factors (eg, viral infections, cigarette smoking) are thought to play a role in triggering and maintaining joint inflammation.

Prominent immunologic abnormalities include immune complexes produced by synovial lining cells and in inflamed blood vessels. Plasma cells produce antibodies (eg, rheumatoid factor [RF], anticyclic citrullinated peptide [anti-CCP] antibody) that contribute to these complexes, but destructive arthritis can occur in their absence. Macrophages also migrate to diseased synovium in early disease; increased macrophage-derived lining cells are prominent along with vessel inflammation. Lymphocytes that infiltrate the synovial tissue are primarily CD4+ T cells. Macrophages and lymphocytes produce pro-inflammatory cytokines and chemokines (eg, tumor necrosis factor [TNF]-alpha, granulocyte-macrophage colony-stimulating factor [GM-CSF], various interleukins, interferon-gamma) in the synovium. Released inflammatory mediators and various enzymes contribute to the systemic and joint manifestations of rheumatoid arthritis (RA), including cartilage and bone destruction.

In seropositive RA, accumulating evidence suggests that anti-CCP antibodies appear long before any signs of inflammation. Additionally, anti-carbamylated protein (anti-CarP) antibodies, predict more radiologic

progression in anti-CCP–negative RA patients. Progression to RA in the preclinical phase depends on autoantibody epitope spreading in which there are immune responses to the release of self-antigens with subsequent inflammation.[1,2,3,4]

Treatment of rheumatoid arthritis (RA) involves a balance of rest and exercise, adequate nutrition, physical measures, drugs, and sometimes surgery. (See also the American College of Rheumatology's 2015 guidelines for the treatment of rheumatoid arthritis and the European League Against Rheumatism's 2019 update EULAR Recommendations for the Management of Rheumatoid Arthritis with Synthetic and Biological Disease-Modifying Antirheumatic Drugs.)

Complete bed rest is rarely indicated, even for a short time; however, a program including judicious rest should be encouraged.

An ordinary nutritious diet is appropriate. Rarely, patients have food-associated exacerbations; no specific foods have reproducibly been shown to exacerbate RA. Food and diet quackery is common and should be discouraged. Substituting omega-3 fatty acids (in fish oils) for dietary omega-6 fatty acids (in meats) partially relieves symptoms in some patients by transiently decreasing production of inflammatory prostaglandins and possibly by modifying the gut microbiome. Smoking cessation can increase life expectancy.

Joint splinting reduces local inflammation and may relieve severe symptoms of pain or compressive neuropathies. Cold may be applied to reduce joint pain and swelling. Orthopedic or athletic shoes with good heel and arch support are frequently helpful; metatarsal supports placed posteriorly (proximal) to painful metatarsophalangeal joints decrease the pain of weight bearing. Molded shoes may be needed for severe deformities. Occupational therapy and self-help devices enable many patients with debilitating RA to perform activities of daily living.

Exercise should proceed as tolerated. During acute inflammation, passive range-of-motion exercise helps prevent flexion contractures. Heat therapy can be applied to help alleviate stiffness. Range-of-motion exercises done in warm water are helpful because heat improves muscle function by reducing stiffness and muscle spasm. However, contractures can be prevented and muscle strength can be restored more successfully after inflammation begins to subside; active exercise (including walking and specific exercises for involved joints) to restore muscle mass and preserve range of joint motion should not be fatiguing. Flexion contractures may require intensive exercise, casting, or immobilization (eg, splinting) in progressively more stretched-open positions. Paraffin baths can warm digits and facilitate finger exercise.

Massage by trained therapists, traction, and deep heat treatment with diathermy or ultrasonography may be useful adjunctive therapies to anti-inflammatory drugs.[5,6,7,8,9]

The context above raises questions about how to achieve optimal care within a multidisciplinary setting in which specialist pharmacists are providing new services requiring networking arrangements to underpin the quality of care as the patient moves between clinical settings, home, hospital, and clinic. The pharmacist input has been developing over the past seven years via inpatient services. The aim of this study was to evaluate the impact of a newly developed pharmaceutical care service within a multidisciplinary outpatients service.[10,11,12,13]

MATERIALS AND METHODS

A pharmaceutical care consultation led to the identification of pharmaceutical care issues. The session focused on determining whether all patient's drug therapy was the most appropriate, safe, effective, and conveniently available for the patient During the pharmaceutical care consultation, the clinical pharmacist identified pharmaceutical care issues. Actual drug therapy problems are problems which are present and hence need to be resolved immediately whereas potential drug therapy problems are problems which are not yet present, but which might arise in future, and which could be avoided if the correct action is taken. The category non-drug therapy problems were added to the list to accommodate pharmaceutical care issues which were not directly related to drug therapy but relied on patient's perception, information on treatment or the need of other help from other health care professionals. Actions (checks or changes) needed to resolve each care issue problem were documented in the care plan within the patient's medical file.

RESULTS AND DISCUSSION

For group A patients the results indicate that there was an improvement in the quality of life of the patients reflected by a decrease in the health assessment questionnaire score which occurred following the pharmacist's intervention during the pharmaceutical intervention at Phase 1. This improvement in the quality of life of the patients increased over time (Phase 3) meaning that the impact of the pharmacist's intervention through individualized pharmaceutical care showed a further improvement in the quality of life of patients on a longer term.

Group B patients registered a statistically significant improvement in their health assessment questionnaire score following a pharmaceutical care session which mirrors the fact that pharmacist intervention improves quality of life. The impact of the pharmacist's contribution after 11 months resulted in an improvement of quality of life. However, for some domains namely physical function and role emotion this impact may take

longer to result in an improvement. The results from Group B patients mirrored those of Group A.

CONCLUSION

Pharmaceutical care services offered within out-patient clinic multidisciplinary team can help to improve the patients' quality of life. This study has confirmed the positive impact of the pharmacist intervention within this multidisciplinary team on the patients' quality attending the out-patient clinic. This has been confirmed in other studies in other areas such as in the management of cardiovascular patients and diabetes patients18-23. Processes to identify patients who would require pharmaceutical care services within the setting may need to be identified in the scenario that the pharmaceutical care services are offered to all patients attending the clinic. Research to standardize the pharmaceutical care services is now being undertaken to ensure a harmonized evidence-based quality service.

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