

Title : The Effects of off-the-Shelf Foot Orthoses on the Quality of Life of Patients Diagnosed with Early Rheumatoid Arthritis

Derek Santos

Senior Lecturer, School of Health Sciences

United Kingdom

dsantos@gmu.ac.uk

Background: Rheumatoid Arthritis (RA) is a chronic and progressive disease that is reported to affect the foot in about 90% of cases. Off-the-shelf foot orthoses are widely used to treat patients with early RA because they are cost-effective but more evidence on their clinical effectiveness is required. This study aims to strengthen the current evidence for off-the-shelf foot orthoses.

Methods: Thirty-five patients participated in the study (mean age (SD) was 52.4 (13.3) years). None of the participants had received foot orthoses or had contra-indications to their use. Participants were excluded if they suffered from concomitant musculoskeletal disease, endocrine disorders, and neurological disease. For the within subject controlled study design, data was collected at baseline, three months and six months. A biomechanical assessment was carried out at baseline and the chair-side customized off-the-shelf foot orthoses supplied. Every patient completed the Leeds Foot Impact Scale (LFIS) questionnaire at each visit.

Results: For LFISif subscale there was statistical significance between baseline and three months ($p=0.000$) and baseline and six months ($p=0.000$). Similar results were also found for LFISap between baseline and three months ($p=0.001$) and baseline and six months ($p=0.000$).

Conclusion: This study suggests that cost-effective off-the-shelf foot orthoses are effective in the management of early RA patients. Patients may expect to see an improvement in QOL by three months with a further improvement by 6 months. This positive effect on QOL is also clinically significant provided patients wear their orthoses for at least six months.

Introduction-

Rheumatoid Arthritis (RA) is a chronic, autoimmune-mediated, systemic, inflammatory disease affecting 0.5-1.5% of the population . During the course of the disease, the foot is commonly affected in 90% or more of cases and it has been shown that the incidence of foot problems associated with RA increases with disease duration . This suggests that there is a relatively small window of opportunity for early Podiatry intervention to manage the foot in RA.

Structural foot insufficiencies as a result of the effects of RA mean that the foot will have to find various ways to compensate for these problems, so that the body can still progress over the supporting limb. The result of this is a foot that has to work particularly hard to achieve what the healthy foot can, and perhaps take longer to achieve it. Additionally, the compensations that the foot employs, coupled with the effects of active small joint synovitis, will inevitably give rise to deformities over time, such as hallux valgus and claw toes .Due to the many functions of the foot required for efficient gait, foot involvement in RA can have a negative effect on gait, and subsequently inhibit the patient's movement, physical activity levels, and general activities of daily living, resulting in a poor quality of life . Foot orthotics, commonly known as insoles, are prescribed by podiatrists with the aim of improving joint and bone alignment thus, improving gait mechanics and indirectly influencing positively pain levels and quality of life. The precise mechanism with regards to how foot orthotics

may affect pain is unknown. A number of potential theories have been proposed, with foot orthoses leading to a more re-aligned foot improving foot posture thus, allowing more normalized motion at joints; reduction and redistribution of plantar foot pressure; reduction in pressure time integral; altering muscle activity; and altering proprioceptive feedback. However, it is more likely that a combination of more than one theory is more likely and that different theories may affect pain through more than one pathway.