Background: Ankylosing spondylitis (AS) is a chronic rheumatic disease characterized by the inflammation of the pelvis and spine with a tendency to bony ankylosis. The most common AS-related alterations in posture are, the limitation of spinal mobility, head protraction, loss of lumbar lordosis, increased dorsal kyphosis, flexion contracture of the hip and consequent flexion of the knee.

Objectives: The purpose of this study was to investigate the foot pressure distribution and functional levels differences in ankylosing spondylitis and also compare with healthy individuals.

Methods: Eighteen patients with ankylosing spondylitis (median age: 42.2 ±2.4 years, median BMI:25.27±1.27 kg/m²) and 17 controls (median age: 43.1±2.4 years, median BMI:26.78±0.65 kg/m²) were included in the study. Plantar pressure distribution was recorded by Digital Biometry Scanning System and Milletrix software (DIASU, Italy). The static test was used to determine the maximum foot pressure (N/cm²). The foot, forefoot weight ratio, rarefoot weight ratio, total load and foot angle axis (FAA). When evaluating spinal mobility; lumbar flexion, lateral flexion and tragus to wall distance were used in Bath Ankylosing Spondylitis Mobility Index (BASMI) sub-parameters. The Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) was used to determine the disease activity; The Bath Ankylosing Spondylitis Functional Index (BASFI) was used to measure functional impairment; The Ankylosing Spondylitis Quality of Life (ASQoL) Questionnaire was filled out by the patients in an attempt to understand the impact of the disease on the quality of life. Mann-Whitney U test was used to compare AS groups with the control group. Spearman test was used for correlation analysis.

Results: No difference between age (p=0.031) and BMI (p=0.012) in both groups. There were no differences modified Schober (p=0.184), lumbar flexion (p=0.160) and tragus to wall distance (p=0.434). But lower right lateral flexion (p=0.003) and left lateral flexion (p=0.001) in ankylosing spondylitis group when compared to healthy individuals. Rearfoot load higher than forefoot load in ankylosing spondylitis group (p=0.001). There were no differences static and dynamic analysis parameters ankylosing spondylitis group and healthy group. In addition to right lateral flexion (r=0.645 p=0.005) and left lateral flexion (r=0.641 p=0.04) correlated foot angle axis; tragus to wall distance correlated maximum foot pressure (r=0.578 p=0.015) and average foot pressure (r=0.542 p=0.025).

Conclusion: Lumbar spine flexibility was lower and associated with foot pressure distribution in AS patients. In addition, the load distribution between the rare and fore foot was different in these patients. Therefore, the foot pressure distribution as well as the spine flexibility should be monitored closely, when implementing and designing the exercise programs in patients with AS.

REFERENCES

Disclosure of Interests: Nazli Sari: None declared, Hande GUNEY DENIZ: None declared, Umut Kalyoncu3, Gu1, Gulfat T1, Nazli Busra Sar1, Hande Guneys Deniz2, Umut Kalyoncu1, Gu1, Gulfat T1 1. Private Guven Hospital, Ankara, 2. Hacettepe University, Faculty of Health Science, Rehabilitation Department, Ankara, 3. Private Guven Hospital, Ankara, Turkey; 2. Hacettepe University, Ankara, Turkey

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Disclosure of Interests: Bilge Taskin: None declared, Naciye Vardar-Yagli: None declared, Umut Kalyoncu Grant/research support from: MSD, Roche, UCB, Novartis and Pfizer, Consultant for: MSD, Abbb, Roche, UCB, Novartis, Pfizer and Abdi Ibrahim, Speakers bureau: MSD, Abbb, Roche, UCB, Novartis, Pfizer and Abdi Ibrahim, Gu1, Gulfat T1: None declared


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