REMS Technology applied to rheumatic diseases

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BACKGROUND:

Many Rheumatic disease such as rheumatoid arthritis, juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, systemic lupus erythematosus, dermatomyositis/polymyositis and vasculitis are characterised by osteoporosis and fragility fractures. Inflammatory cytokines, steroid treatment, immobilization and reduced physical activity due to joint pain and muscle weakness are considered the major risk factors for the development of low bone mineral density in these diseases. Many evidences have highlighted the role of pro-inflammatory cytokines (TNF-a, IL-1, IL-6, IL-7, IL17) in bone homeostasis regulation. Chronic inflammation is often characterized by an imbalance between bone formation and resorption, with a clear prevalence of osteoclastogenesis which is a strong determinant in rheumatic diseases bone loss.

OBJECTIVES:

The aim of this study is to evaluate the REMS (Radiofrequency Echographic Multi-Spectrometry) technology in rheumatologic patients, compared to DEXA currently recognised as the gold standard for the evaluation of bone mineral density.

METHODS:

Twenty female patients (mean age 60.6 ±14.41 years) with different rheumatologic diseases were considered. Each patient underwent a lumbar spine and hip examination performed by DEXA and REMS technology. In particular, after a quality control to assess that both the exams were performed correctly, 18 lumbar and 20 femoral exams (DEXA vs REMS) were compared.

RESULTS:

As expected, the exams performed show a good diagnostic match (>60%LS and >85% FEMORE). The tests that didn't show diagnostic concordance were those affected by arthrosis processes (greater on the Spine). The REMS T-score values were lower than those obtained with the DXA method.

CONCLUSION:

These results show how REMS technology can discriminate patients with osteoporosis as much as DEXA technology. The REMS technology can be a diagnostic option especially in patients with rheumatologic diseases that cause alterations in the spine reducing the diagnostic sensitivity of DXA technology.