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Osteoporosis in Rheumatoid Arthritis

Elena Deseatnicova
Department of Rheumatology and Nephrology

Introduction

Osteoporosis (OP) is a common complication observed in rheumatoid arthritis (RA) patients. Two types of bone loss localized and generalized are documented in RA patients. It is considered that pathogenesis of RA plays an important role in the development of these bone changes.

Keywords: **Rheumatoid arthritis, osteoporosis, bone pathology**

Purpose

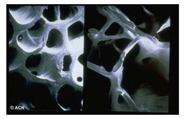
To identify and analyze the most relevant articles on the topic of bone pathology in rheumatoid arthritis published in Pubmed resource during 2000-2020

Material and methods

Pubmed database with key words rheumatoid arthritis, osteoporosis, bone pathology → 2199 Articles → After exclusion of less relevant articles, 105 sources were analyzed

Results

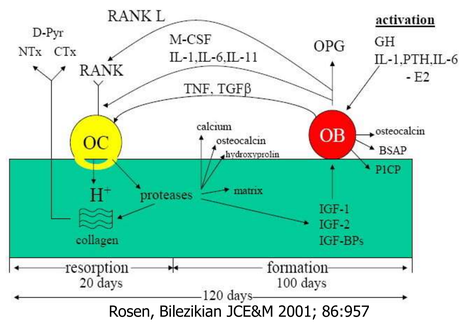
Two types of OP in RA



Generalysed osteoporsis

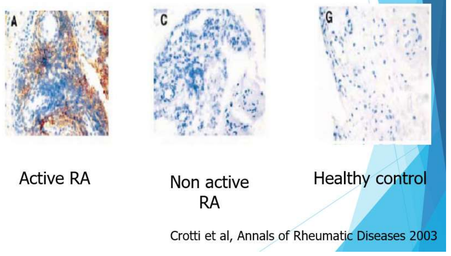
Localised osteoporosis

- Both types have the same pathogenetic



Rosen, Bilezikian JCE&M 2001; 86:957

RANKL in synovia



Active RA | Non active RA | Healthy control

Crotti et al, Annals of Rheumatic Diseases 2003

Assessment of fracture risk in patients with RA

Most paradoxical fractures occur in patients without OP, in those with **osteopenia**.
Other factors such as **sarcopenia, vitamin D deficiency must be considered** in assessing the total risk of fracture.
A good method for assessing fracture risk can serve **FRAX**.

OP predictors (T-score < -2,5) in postmenopauzal RA:

Rezults of multiple regresive linear analysis:

	Age	Low BMI	Current GCS	Immobi lisation	RF
Spine and hip	+	+	+	-	-
Hip	+	+	+	+	-
Femural neck	+	+	+	+	+

Haugeberg et al; Artritis Rheum 2000; 522-530

In vitro RANKL expression is stimulated by cytokines: TNFα, IL-1. In patients with RA, the RANKL level is increased both in the serum and in synovia

Synovial cytokines, especially MCS-F and RANKL, promote the differentiation of osteoclasts and their invasion in the periosteal area adjacent to the articular cartilage.
TNF-α, IL-1, Il-6 and IL-17 intensify differentiation and OK activation.

Positive Anti CCP patients, especially if at high levels, should be investigated and treated with bone protection agents.
DMARD anti-rheumatic drugs, which lower the antiCCP titer, can have positive effects on systemic bone mass.

Conclusions: Bone pathology in RA is one of the key mechanisms in arthritis progression along with synovia pathology. Generalized OP in RA is associated with increased disability and mortality. Patients with RA should be screened for OP as early as possible and treated , including profilaxy.