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# Fracture risk assessment in patients with rheumatoid arthritis using the fracture risk assessment tool

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## Introduction:

Rheumatoid arthritis (RA) is a chronic inflammatory rheumatic disease that mainly affects pre-menopausal women, leading to disability, work incapacity and increased mortality. Osteoporosis is an extra-articular complication of RA. It can be caused by inflammatory processes or by the use of glucocorticoids, which increases fracture risk in this vulnerable population.

## Aim of the study

To assess the probability of major osteoporotic fractures and hip fractures over the next 10 years in patients with RA using the Fracture Risk Assessment Tool (FRAX) and deduce the various incriminating factors.

## Materials and methods

A retrospective, descriptive, cross-sectional study of 107 patients with RA who met the 2010 American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) criteria for classification of RA and who were over 40 years of age. Sociodemographic, anthropometrical, clinical, para-clinical, lumbar spine T-score (L2-L4) and femoral neck T-score data were collected. The FRAX score was calculated for all patients.

| Variable : | Caractéristiques : |
|---|---|
| **Mean age** | 52,82 [40-72] |
| **Gender**<br>**Female (%)**<br>**Male** | <br>79,4%.<br>20,6% |
| **Menopausal**<br>**non-menopausal** | 58,9%<br>41,1% |
| **mean age at menopause** | 49,39 [34-60]. |
| **Mean BMI** | 26,30 |
| **Mean DAS28 CRP** | 5,21 [1,27-7,2] |
| **Average dose of corticosteroid therapy** | 8 mg [5-15] |
| **Average duration of corticosteroid therapy** | 4 ans [0-28] |
| **Osteoporosis** | 36,4% |
| **Spinal fracture** | 12,1% |
| **Average T-score :**<br>**L2-L4 spine**<br>**Dual femur** | <br>-2,2[-5,2;1,7]<br>-1,5[-6;2,8] |
| **Average BMD**<br>**L2-L4 spine**<br>**Dual femur** | <br>0,942 g/cm² [0,456-1,426]<br>0,855g/cm² [0,335-1,252] |
| **Average FRAX for :**<br>**Major fracture**<br>**Hip fracture** | <br>17,5% [4,1-91]<br>7,03% [0,2-89] |

Table 1: General population characteristics

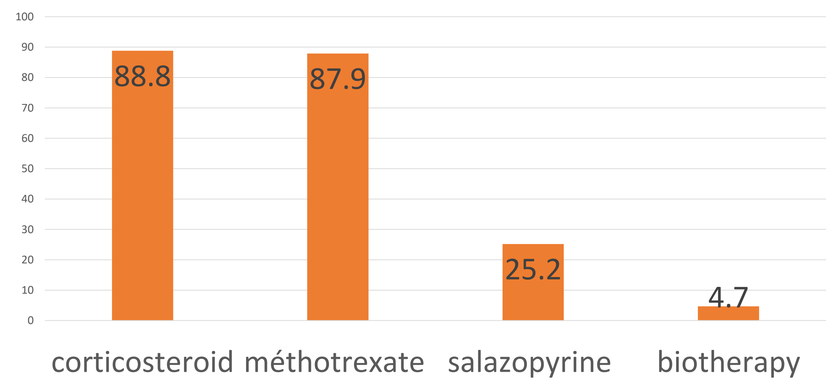


Figure1:treatment distribution

| Variables | Correlation coefficients r | P value |
|---|---|---|
| **age** | 0.468 | <0,01 |
| **Cumulative dose of steroids** | 0.80 | <0.01 |
| **Duration of corticosteroid therapy** | 0,63 | 0.01 |
| **Duration of RA evolution** | 0.202 | <0,05 |
| **BMI** | -0.246 | <0,01 |
| **Lumbar spine BMD** | -0.423 | <0,01 |

Table 2: correlation between FRAX of major osteoporotic fractures and the various variables

| Variables | Correlation coefficients r | P value |
|---|---|---|
| **age** | 0.321 | <0,01 |
| **Cumulative dose of steroids** | 0.73 | <0.01 |
| **Duration of corticosteroid therapy** | 0.65 | 0.01 |
| **Duration of RA evolution** | 0.201 | <0,05 |
| **BMI** | -0.253 | <0,01 |
| **Lumbar spine BMD** | -0.516 | <0,01 |

Table 3: Correlation between FRAX for hip fractures and various variables

## Conclusion:

Our study demonstrated that the likelihood of osteoporotic fractures over the next 10 years in patients with RA was high in patients who had a low BMI, low lumbar spine BMD and who were taking long-term corticosteroid therapy.