

Factors associated to developing CVD and Stroke in patients with established Rheumatoid arthritis- a BARFOT cohort study

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Conclusion

Knowledge about factors associated to cardiovascular disease is important when treating patients with established RA.

Long-term treatment with corticosteroids seems to increase the risk to develop CVD. Treatment with DMARDs, especially conventional DMARDs, seems to decrease the risk to develop stroke.

There were no association between developing CVD or stroke and NSAIDs in this study.



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Background

Patients with rheumatoid arthritis (RA) have a higher risk of cardiovascular diseases (CVD) and stroke. More knowledge about associated factors is needed since it could have implications on different treatment strategies.

Objective

To study factors associated to CVD and stroke development in patients with established RA.

Method

A questionnaire was sent twice to patients with established RA in the BARFOT cohort, in 2010 (n=1525) and in 2017 (n=1046) with a response rate of 73% and 68% respectively. 950 patients responded to both questionnaires. All patients fulfilled the ACR criteria for classification of RA and had a disease duration at inclusion (1992 to 2006) of ≤12 months. The patients reported body mass index, smoking habits, tender (TJC) and swollen joint count (SJC, 28-joints), pain intensity (NRS) and physical function (HAQ), health related QoL (EQ5D), and medical treatment (DMARD, corticosteroids and NSAID). Possible factors associated with developing CVD or stroke at the questionnaire in 2017 or not (dependent variable) was studied by using a logistic regression analysis.

Multivariate associations between clinical variables and developing CVD from 2010 to 2017

| | OR | 95% CI | P-value |
|------------------|-------------------------|-----------------------------|------------------|
| Age 2010 | 1.071 | (1.015-1.129) | 0.012 |
| Gender, men (%) | 7.459 | (2.664-20.883) | <0.001 |
| HAQ (0-3) | 1.456 | (0.659-3.258) | 0.349 |
| CS 2010 and 2017 | Ingen CS | 1 | |
| | CS 2010 | 0.707 (0.083-6.056) | 0.752 |
| | CS 2017 | 2.517 (0.505-12.556) | 0.260 |
| | CS 2010 and 2017 | 4.473 (1.525-13.117) | 0.006 |

HAQ, health assessment questionnaire; CS, corticosteroids

Multivariate associations between clinical variables and developing Stroke/TIA from 2010 to 2017

| | OR | 95% CI | P-value |
|---------------------|-----------------|----------------------|------------------|
| Age 2010 | 1.081 | (1.047-1.117) | <0.001 |
| Gender, men | 1.012 | (0.531-1.929) | 0.972 |
| Smoking habits 2010 | Non smoker | 1 | |
| | Smoker | 1.337 (0.520-3.440) | 0.546 |
| | Previous smoker | 1.789 (0.930-3.441) | 0.081 |
| SJC (0-28) | | 0.952 (0.884-1.026) | 0.198 |
| DMARD 2010 | No DMARD 2010 | 1 | |
| | bDMARD 2010 | 0.588 (0.257-1.343) | 0.208 |
| | cDMARD 2010 | 0.510 (0.259-1.004) | 0.051 |

SJC, Swollen joint count – 28 joint; DMARD, disease modifying anti-rheumatic drug; cDMARD, conventional DMARD; bDMARD, biological DMARD

Results

Twenty-two patients (3%) developed CVD and 55 (6%) patients stroke over the seven years between the two questionnaires. Patients that developed CVD were older median (min-max 71 years (62-76) vs. 62 years (52-68), p<0.001, and to a higher rate men, 68% vs. 24%, p<0.001. They also more often, 40% vs. 11%, p=0.001, reported treatment with corticosteroids at both questionnaires. In a multivariate regression analysis age, OR (95% CI) 1.071 (1.015-1.129), male gender 7.459 (2.664-20.883) and reporting treatment with corticosteroids at both questionnaires 4.473 (1.525-13.117) were associated to CVD.

Patients that developed stroke were older, median (min-max) 70 (65-76) vs. 62 (52-68), p<0.001, and more often not treated with any DMARD, 30% vs. 18%, p=0.069. There were no other significant differences between the groups. In a multivariate regression analysis age, OR (95% CI) 1.081 (1.047-1.117) and reporting treatment with conventional DMARD 0.510 (0.259-1.004) were associated to stroke at the second questionnaire. There were no associations between reported use of NSAIDs and development of CVD or stroke in this study.



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