

**Lay title: The influence of TNF inhibitors on dementia incidence in patients with rheumatoid arthritis.**

***Full title: The influence of TNF inhibitors on dementia incidence in patients with rheumatoid arthritis; an analysis from the BSRBR-RA.***

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### **What was already known?**

Inflammation is thought to have an impact on Alzheimer's disease and other dementias. As a result, patients with rheumatoid arthritis (RA) may have an increased risk of Alzheimer's disease. However, it may be possible that treatment with a tumour necrosis factor inhibitor (TNFi), aimed to reduce inflammation in patients with RA, can reduce this risk. The objectives of this study were to compare the occurrence of dementia in patients with RA starting TNFi therapy with patients who receive conventional therapy (csDMARD).

### **What was discovered?**

The British Society for Rheumatology Biologics Register for RA (BSRBR-RA) collects data on adults with RA starting either a biologic therapy (such as a TNFi), or a csDMARD. From the initiation of the register to 30/11/2014, 17'248 patients were recruited starting either a TNFi (13'474) or a csDMARD (3'774). In total, 46 cases of dementia were identified; 24 in the TNFi patients, 22 in the csDMARD patients. This resulted in an incidence rate of 4.5 cases of dementia for every 10'000 years in the study ("person years"). The incidence of dementia among patients starting a TNFi was lower compared with the rate observed in the csDMARD cohort (3.1 compared with 8.5 per 10,000 person years). When taking into account some of the difference between the two groups of patients (e.g. age, gender, severity of RA), those patients starting a TNFi were 33% less likely to get dementia compared with the csDMARD patients. However this was not statistically significant.

### **Why is this important/what is the benefit to patients?**

These results show that patients with RA starting a TNFi potentially have a lower rate of dementia diagnosed compared with patients treated with a csDMARD. However it is important to note that due to very few patients developing the disease (due to the young age of the cohort), the difference between the two groups was not statistically significant. By following the patients in the BSRBR-RA further, and as their age and risk of dementia increases, this question may be answered more clearly.

Should you wish to read this scientific paper in full, the text can be found online here:

<https://www.ncbi.nlm.nih.gov/pubmed/29424111>

