**AB0246**

**GENETIC VARIABILITY WITH TOLL-LIKE RECEPTOR 10 AFFECTS SUSCEPTIBILITY TO RHEUMATOID ARTHRITIS AND MODULATES RESPONSE TO BIOLOGICAL TREATMENT**

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**Methods:** TLR10 genetic variants with RA susceptibility and/or response to treatment.

**Results:** RA patients with the AC genotype showed predisposition to disease (OR 0.63 (0.42–0.87)), while the AA homozygosity seemed to play a protective role (OR 1.99 (1.32–2.97)) characterised with a higher degree of the disease as compared to RF-positive cases (p=0.01). Men had a higher activity of the disease before anti-TNF treatment as compared to women (p=0.04). RA patients with the AC genotype had more effective treatment after 6 months of anti-TNF treatment as compared to RF-positive cases (p=0.001) characterised with a higher degree of the disease as compared to RF-negative cases (p=0.01). Men had a higher activity of the disease before anti-TNF treatment (p=0.05), therefore the remission of the disease was more common in men (p=0.04).

**Conclusions:** These results imply that the TLR10 polymorphism has an important role in RA and may potentially influence risk of the disease and effectiveness of biological treatment.

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**AB0247**

**LACK OF AGEING WITH LONG TERM METHOTREXATE: OBJECTIVE MEASUREMENTS OF COGNITION, AUDIOMETRY, AND SLEEP**

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**Background:** Methotrexate (MTX) has long been known to improve the cardiovascular system. Myocardial infarction, strokes, and mortality are significantly reduced in patients compliant with long term MTX. Hearing loss at middle age is associated with increased risk of dementia, and sleep over 8 hours is associated with better health. MTX may affect all of these risk factors.

**Objectives:** Our hypothesis is that the cardiovascular benefits of long term MTX treatment would translate into improved cognition, improved hearing, and better sleep patterns.

**Methods:** Cambridge Cognition (CamCog based in Cambridge)developed cognitive objective testing to study brain function. CamCog is widely used to assess cognitive function in Alzheimer's disease, dementia and ageing. The CamCog tests are computer based. Programs used in this trial included "PAL", paired associates learning for new learning memory and "SWM", spatial working memory along with new strategic thinking during the test. These tests provide 22 assessments per patient. In separate testing, each patient was scored on the mini-mental state examination, including serial 7's, WORLSPACE backward, memory retention of 3 items, and drawn forms such as clock faces. Sleep patterns were assessed by questionnaire.

**Results:** There were 88 patients with RA between the ages of 80–101 years who had been treated with MTX a minimum of 20 years. The average PALFAM score for the group was 16.3 (sd 2.7) with a maximum score of 20. The SWMBE score for errors for the group was 2.2 (sd 4.4) with the best score 0 errors. In all 22 scoring categories of the CamCog tests, the 88 long term MTX users scored in the top quintile, and better than a much higher average for published results for healthy older people at age 65. All scores were statistically significant (p=0.01) compared to healthy 65 year olds. It was not possible to compare age, sex matched normal individuals because the normative CamCog database only extends to age 90. All 88 subjects scored above 24 on the mini-mental testing (reflecting no cognitive impairment on that test). The audiometry testing was much better than expected for age, in the top tertile. Of the 88 patients on long term MTX, 3 had hearing aids. Sleep duration averaged 8.5 hours/pn which is considered excellent for maintaining cognition.

**Conclusions:** This is a subset of people with cardiovascular risk due to age and RA. The CV risk assessment tool for our subgroup predicted 10 year risk for MI or CVA at 54%. We did not see MI or CVA over 20 years, despite RA. Expanding on that physiology we found 88 RA patients on long term MTX had above average cognitive testing, completed mini-mental test, drawings, audiology close to the scores expected for people 3 decades younger. One reason these preliminary results cannot be generalised to other populations is that only RA patients were studied with long term MTX. Also our group were 80–101 years old and there may be a survival advantage in this subgroup since all were healthy at age 65. A study in a larger general population given MTX for several years would be needed to evaluate the benefit in cognition, hearing, and sleep.

**References:**


* ASCVD algorithm in the ACC/AHA Guidelines on the Cardiovascular Risk

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