COMMON ACNE MEDICATION MAY HELP DELAY A DIAGNOSIS OF MS

20 June, 2017

Canadian researchers have published their results of a clinical trial testing whether an antibiotic commonly used in the treatment of acne can help prevent a diagnosis of MS in people who have experienced a first attack.

Clinically Isolated Syndrome (CIS) is diagnosed when a person has had a first attack of neurological symptoms and has a few lesions seen in their MRI scan. However, MS is only diagnosed when a second attack occurs or further new lesions appear in their MRI scans. This trial aimed to test whether using the antibiotic minocycline could prevent or delay that second attack in people with CIS.

Minocycline is an antibiotic that has been in use since the 1970s. It is most commonly used to treat severe acne. However, minocycline is also known to have immune-modulating properties, meaning that it can alter the balance of inflammatory immune cells in the body. Two smaller, earlier trials have suggested that minocycline was able to reduce the number of MRI lesions in people with MS.

These immune modifying properties, together with the possibility of 're-purposing' a cheap off-patent drug prompted the researchers to test this medication in people with CIS. The study was funded by the MS Society of Canada.
The research team, led by Dr Luanne Metz at the University of Calgary, together with a large collaborative team of MS experts, published the results in the prestigious *New England Journal of Medicine* , earlier this month.

The trial, conducted between 2009 and 2013, randomly assigned 72 people with CIS to receive minocycline and 70 people to receive a placebo. The participants received twice daily capsules of either a mock treatment (placebo) or minocycline for up to 24 months or until a diagnosis of MS was reached. They were monitored clinically for the possibility of new relapses, and by regular MRI scans and had their disability level measured using the neurological Expanded Disability Status Scale (EDSS). Adverse events and side-effects were also monitored.

The results showed that the risk of converting to MS in the first six months was 61% in the placebo group, but only 33% in the group receiving minocycline. However at 24 months there was no differences between the groups, and similar proportions had gone on to have a second attack, leading to a diagnosis of MS. The minocycline group also showed fewer lesions in the MRI scans during the first 6 months, however at 24 months there were minimal differences between the two groups.

This suggests that minocycline is effective in delaying a diagnosis of MS in the first 6 months following the onset of CIS. However, this protective effect is not sustained over 24 months.

The treatment was relatively well tolerated and showed similar side-effects as had been noted previously for this medication, most commonly including rash, dizziness and dental discoloration. More people receiving minocycline dropped out of the study early than those receiving placebo, suggesting that some people were not able to tolerate the medication.

Early intervention or delaying disease progression is thought to help preserve brain tissue and lead to better long-term outcomes, this study suggests that minocycline may be helpful in the early stages of CIS. However, the authors have cautioned that given the length and number of participants, additional trials are required to confirm the findings from this study.