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TNFi associated with time-shifted effect on spinal damage progression

Continuous treatment with an effective anti-inflammatory has disease-modifying properties in axSpA

INTRODUCTION

Spondyloarthritis (often shortened to SpA) is an umbrella term for several conditions that share many features and symptoms. These conditions include ankylosing spondylitis, psoriatic arthritis and reactive arthritis. Spondyloarthritis can be classified as axial or non-axial (peripheral), according to which joints in the body are affected. Axial disease (axSpA) affects the spine. Peripheral disease affects other joints in the body, such as the knees, ankles, shoulders, feet, or hands. Spondyloarthritis causes damage to a person's joints. If this damage worsens over time it is called *structural progression*. Structural progression in the spine due to new bone formation is thought to be caused by inflammation. However, it is not known whether effective anti-inflammatory treatment might delay this damage. The minimum duration of treatment needed is also uncertain.

Nonsteroidal anti-inflammatory drugs (shortened to NSAIDs) are often prescribed to people with axial spondyloarthritis. These drugs help reduce inflammation and pain. If these do not work, then people may be given a type of medicine called a biologic disease-modifying antirheumatic drug (often shortened to a biologicals or bDMARDs). These biologic drugs target specific molecules that cause inflammation. By doing so, they reduce inflammation in the joints and decrease pain and disease worsening. There are two types of biologic medicine that are used for axial spondyloarthritis. They block either tumour necrosis factor (TNF inhibitors) or interleukin-17 (IL-17 inhibitors).

WHAT DID THE AUTHORS HOPE TO FIND?

The authors wanted to find out whether treatment with TNF inhibitors might be able to slow structural progression in people with axial spondyloarthritis.

WHO WAS STUDIED?

The study looked at 243 people with axial spondyloarthritis who had experienced symptoms for up to 10 years. Most people taking part were in their mid thirties, and there were equal numbers of men and women.

HOW WAS THE STUDY CONDUCTED?

This was a long-term observational study, which means that the researchers observed and recorded information at several time points about the people in the study. A study of this type is used to compare different groups of people over a period of time, without changing any variables. Information was taken from a database called GESPIC – an ongoing study in Germany focusing on clinical and radiographic outcomes of people with spondyloarthritis.

Everyone taking part had a regular clinical examination (every 6 months in the first 2 years, and then once a year). Everyone also had an X-ray to look at their spine and check for progression every 2 years. The people in the study were followed for up to 10 years.

For this analysis the authors looked at data from people with at least two sets of spinal X-rays taken 2 years apart. They analysed the progression of structural damage in the spine, and then looked to see if this was linked to whether people were taking a TNF inhibitor or not.

WHAT WERE THE MAIN FINDINGS OF THE STUDY?

The main finding was that in the first 2 years after starting a TNF inhibitor there was no difference in structural damage progression in the spine between treated and not treated patients. However, a substantial slowing of progression was observed between Year 2 and Year 4 for people taking a TNF inhibitor. In this study higher NSAID intake was also associated with reduction of spinal progression.

The authors concluded that anti-inflammatory treatment does not have an immediate effect on the spine. They also suggest that continuous control of inflammation is needed to slow structural progression in the spine.

ARE THESE FINDINGS NEW?

No, these findings confirm previous observations that there might be a delayed effect of TNF inhibitors on progression. However, these new results show clearly the difference between immediate treatment effects in the first 2 years, and longer term effects from Year 2 to Year 4.

WHAT ARE THE LIMITATIONS OF THE STUDY?

The main limitations are the use of X-rays instead of a CT scan, which means that only small parts of the structural damage could be seen. In addition, MRI was not performed and spinal inflammation could be measured only indirectly with blood tests. Another limitation is the observational nature of the study, which means that people were not assigned to the groups by chance. This means there could have been additional factors affecting the outcomes.

WHAT DO THE AUTHORS PLAN ON DOING WITH THIS INFORMATION?

More studies are needed to identify people with axial spondyloarthritis who are at high risk of progression early in the course of their disease. These people would benefit from tight control of inflammatory activity. More studies are also needed to compare different drugs and combinations of therapies to see which are best in reducing structural damage progression in people with axial spondyloarthritis.

WHAT DOES THIS MEAN FOR ME?

If you have axial spondyloarthritis, then controlling inflammation is important for maintaining your physical function in the long-term. You can do this by controlling your disease activity with effective treatments. This benefit of controlling inflammation is likely to be true for any treatment type with sufficient anti-inflammatory activity.

If you have any questions or concerns about your disease or its treatment, you should speak to your doctor.

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