Key finding

With freely available online artificial intelligence software, it's possible to produce fake but very convincing scientific abstracts, quickly and easily

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Comparative effectiveness of etanercept versus monoclonal antibodies in axial spondyloarthritis: a retrospective study

WARNING
This poster utilises fake scientific data

INTRODUCTION / OBJECTIVE

ChatGPT is an 'artificial intelligence' (AI) computer program that uses advanced machine-learning techniques

Specifically, it uses probability distributions to generate human-like sentences, using hundreds of gigabytes of text – i.e. based on billions of word sequences – and is able to create specialist, technical content

Our objective was to explore whether ChatGPT is able to generate a scientific abstract of sufficient quality to be accepted in a mainstream scientific meeting

METHODS

We asked ChatGPT 3.5 (verbatim) to

> *Write a 400 word scientific abstract, on a study showing that etanercept is inferior to monoclonal antibodies, in axial spondyloarthritis. Use sub-headings:*
> - *Introduction*
> - *Methods*
> - *Results*
> - *Conclusion*

This gave an abstract of 255 words – considerably less than the limit for BRITSpA. So the following commands were also given

> *Provide some more results*
> and
> *Provide more detail on the methods*

We also asked it to suggest a title for the abstract, and some author names

RESULTS

It is!

Introduction Axial spondyloarthritis (axSpA) is a chronic inflammatory disease that affects the axial skeleton, leading to pain, stiffness, and reduced mobility. Tumour necrosis factor (TNF) inhibitors, including etanercept and monoclonal antibodies (mAbs), are commonly used in the treatment of axSpA. However, there is limited evidence comparing the efficacy of etanercept and mAbs in axSpA. This study aimed to compare the effectiveness of etanercept versus mAbs in axSpA.

Methods This was a retrospective study of patients with axSpA treated with either etanercept or mAbs between January 2010 and December 2020. The primary outcome was the proportion of patients achieving an Assessment of SpondyloArthritis international Society 40 (ASAS40) response at 6 months. Secondary outcomes included ASAS20 and ASAS partial remission (PR) at 6 and 12 months, as well as the proportion of patients discontinuing treatment due to adverse events.

Results A total of 246 patients were included in the study, with 123 patients receiving etanercept and 123 receiving mAbs. At 6 months, the proportion of patients achieving ASAS40 was significantly higher in the mAbs group (61.8%) compared to the etanercept group (37.4%, $p<0.01$). Similar results were observed for ASAS20 and ASAS PR at 6 and 12 months. The proportion of patients discontinuing treatment due to adverse events was similar between the two groups.

In addition to the primary and secondary outcomes, this study also found that patients in the mAbs group had significantly higher mean changes in Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Bath Ankylosing Spondylitis Functional Index (BASFI) scores at 6 and 12 months compared to the etanercept group ($p<0.01$). Furthermore, the mAbs group had a significantly higher proportion of patients achieving low disease activity at 6 and 12 months compared to the etanercept group ($p<0.01$). Adverse events were reported in 38.2% of patients in the etanercept group and 36.6% of patients in the mAbs group, with no significant difference between the two groups. The most common adverse events reported were injection site reactions, infections, and gastrointestinal symptoms. Overall, these results suggest that mAbs may provide superior clinical outcomes compared to etanercept in the management of axSpA.

Conclusions In patients with axSpA, treatment with mAbs was superior to etanercept in terms of achieving ASAS40, ASAS20, and ASAS PR responses at 6 and 12 months. This study provides further evidence supporting the use of mAbs as a first-line treatment option for axSpA.

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