

ABSTRACT

Pharmacoeconomic studies on biologic agents for ankylosing spondylitis: A systematic review

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Objective: This study aims to systematically review and assess the quality of published pharmacoeconomic studies on biologic agents for ankylosing spondylitis conducted both domestically and internationally.

Methods: PubMed, Embase, and the Cochrane Library databases were searched using English keywords such as “ankylosing spondylitis” and “pharmacoeconomics.” Chinese databases, including China National Knowledge Infrastructure (CNKI) and Wanfang Database, were searched using Chinese keywords such as “ankylosing spondylitis”, “cost” and “effectiveness”. The search was conducted from the inception of the databases until February 2023. The quality of the included studies was assessed using the Consolidated Health Economic Evaluation Reporting Standards (CHEERS 2022) and the Quality of Health Economics Studies Instrument (QHES). Two researchers extracted data from the included studies, and descriptive analysis was performed to summarize the characteristics of the included studies.

Results: A total of 24 English-language studies were included in the review. The included studies were published between 2004 and 2020, with 19 studies classified as high-quality and 5 studies as “general quality studies.” Furthermore, 18 studies (75%) were model-based pharmacoeconomic evaluations, including Markov models, mathematical models, and discrete event simulation models. In terms of economic evaluations, Tumour necrosis factor (TNF) inhibitors and IL-17 inhibitors were found to be more cost-effective compared to traditional nonsteroidal anti-inflammatory drug (NSAIDs) treatment. Factors such as the BASDAI 50 response rate and disease-related costs had varying degrees of impact on the incremental cost-effectiveness analysis results.

Conclusion: The overall results indicate that, in the short-term treatment scenario, biologic agents are not cost-effective compared to traditional treatment options, but in the long-term treatment scenario, biologic agent treatment becomes more cost-effective. The most cost-effective intervention measures varied among different studies comparing different biologic agents.

Key words: ankylosing spondylitis, biologicals, pharmacoeconomic evaluation, systematic review, TNFis inhibitors, IL-17 inhibitor

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