# Article information:

Safety and efficacy of tezepelumab vs. placebo in adult patients with severe uncontrolled asthma: a systematic review and meta-analysis | Scientific Reports
<https://www.nature.com/articles/s41598-022-24763-9>

# Article summary:

1. Tezepelumab, a human monoclonal antibody that blocks thymic stromal lymphopoietin (TSLP), has been shown to decrease flare-ups in adults with severe uncontrolled asthma.

2. A systematic review and meta-analysis of four randomized controlled trials found that tezepelumab was effective in reducing annualized asthma exacerbation rate and improving lung function, quality of life, and symptom control compared to placebo.

3. The safety profile of tezepelumab was similar to placebo, with no significant differences in treatment-emergent adverse events or serious adverse events observed.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article titled "Safety and efficacy of tezepelumab vs. placebo in adult patients with severe uncontrolled asthma: a systematic review and meta-analysis" provides an overview of the use of tezepelumab, a human monoclonal antibody, as a treatment for severe uncontrolled asthma in adults. The article highlights the chronic nature of asthma and the limitations of current biologic therapies in addressing non-allergic or non-eosinophilic types of asthma.

The article presents a comprehensive literature search and selection process, adhering to preferred reporting guidelines for systematic reviews and meta-analyses (PRISMA) 2020 and Cochrane Handbook of Systematic Reviews of Intervention. The authors also registered their protocol on PROSPERO.

The study included four randomized controlled trials (RCTs) with a total sample size of 1600 patients, where 798 patients received tezepelumab, and 802 patients received a placebo. The authors provide baseline characteristics of the enrolled patients in each included study.

The quality assessment was conducted using the Cochrane risk-of-bias tool for randomized trials (RoB 2), which evaluated the bias risk from low to high risk. The authors present figures illustrating the bias risk summary.

The article reports on various outcomes related to treatment efficacy, including annualized asthma exacerbation rate (AERR), change from baseline in pre-dose/pre-bronchodilator (pre-BD) forced expiratory volume in 1 s (FEV1), weekly mean daily asthma symptom diary score, ACQ-6 Score, standardized asthma quality of life questionnaire for 12 years and older (AQLQ(S)+12) total score, European quality of life-5 dimensions 5 level version (EQ-5D-5L) health state evaluation at Week 52, blood eosinophil count, FeNO, and serum total IgE. The authors also report on treatment-emergent adverse events (TEAEs) and Treatment-emergent serious adverse events (TESAEs).

The article provides a detailed overview of the mechanism of action of tezepelumab, its impact on TSLP, and its potential to address both T2 and non-T2 mediated asthma. The authors present evidence from phase 3 "NAVIGATOR" (NCT03347279) and phase 2b "PATHWAY" (NCT02054130) investigations, which showed that tezepelumab decreased flare-ups dramatically in adults with severe uncontrolled asthma.

Overall, the article presents a well-structured and comprehensive review of the use of tezepelumab as a treatment for severe uncontrolled asthma in adults. However, there are some potential biases and limitations to consider.

One limitation is that the study only included RCTs, which may limit the generalizability of the findings to real-world settings. Additionally, while the authors provide a comprehensive overview of the included trials' essential characteristics and patients' baseline characteristics, they do not provide information on potential confounding factors or other variables that may impact treatment efficacy.

Another potential bias is that the article focuses primarily on the positive outcomes associated with tezepelumab use, without exploring potential negative effects or limitations. While the authors do report on TEAEs and TESAEs, they do not provide an in-depth analysis of these outcomes or explore potential risks associated with tezepelumab use.

Finally, while the article presents evidence supporting the efficacy of tezepelumab in addressing severe uncontrolled asthma in adults, it does not explore counterarguments or alternative treatments for this condition. This lack of exploration may limit readers' ability to make informed decisions about treatment options for severe uncontrolled asthma.

In conclusion, while this article provides a comprehensive overview of the use of tezepelumab as a treatment for severe uncontrolled asthma in adults, it is important to consider potential biases and limitations when interpreting the findings. Further research is needed to explore potential negative effects or limitations associated with tezepelumab use and to compare its efficacy with alternative treatments for severe uncontrolled asthma.

# Topics for further research:

* Alternative treatments for severe uncontrolled asthma
* Negative effects of tezepelumab use
* Real-world effectiveness of tezepelumab
* Factors impacting treatment efficacy in severe uncontrolled asthma
* Long-term safety of tezepelumab
* Non-T2 mediated asthma and treatment options

# Report location:

<https://www.fullpicture.app/item/fa70208057bad57ce8ad6ffd758925ed>