# Article information:

Treatment-related adverse events of PD-1 and PD-L1 inhibitor-based combination therapies in clinical trials: a systematic review and meta-analysis - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S1470204521003338>

# Article summary:

1. This study conducted a systematic review and meta-analysis to investigate the incidences and profiles of treatment-related adverse events across different combination therapies with PD-1 or PD-L1 inhibitors.

2. The overall incidence of treatment-related adverse events in the chemotherapy combination was 97·7% for all-grade adverse events and 68·3% for grade 3 or higher adverse events; in the targeted therapy combination was 94·5% for all-grade adverse events and 47·3% for grade 3 or higher adverse events; in the immunotherapy combination was 86·8% for all-grade adverse events and 35·9% for grade 3 or higher adverse events; and in the radiotherapy combination was 89·4% for all-grade adverse events and 12·4% for grade 3 or higher adverse events.

3. The most common all-grade and grade 3 or higher treatment related adverse events were anaemia, fatigue, dysphagia, neutropenia, hypertension, lipase increased, and lymphopenia respectively.

# 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:

This article is a systematic review and meta-analysis of clinical trials investigating globally approved PD-1 or PD-L1 inhibitor based combination therapies. The authors conducted a comprehensive search of Pubmed, Embase, and Cochrane databases to identify relevant studies published between Jan 1, 2000, and May 21, 2020. The primary outcomes were overall incidences and profiles for all-grade and grade 3 or higher treatment related adverse events by random effect models.

The article appears to be reliable as it provides comprehensive data on treatment related adverse effects of different PD-1 or PD-L1 inhibitor based combination therapies from 161 studies (17 197 patients). Furthermore, the included randomised controlled trials had a low risk of bias. However, there are some potential biases that should be noted such as publication bias due to only including studies published in English which may have excluded important studies from other languages. Additionally, there may be selection bias due to excluding trials enrolling less than ten patients which could have provided valuable information on rarer side effects not seen in larger trials. Finally, there may also be recall bias due to relying on patient reported symptoms which can be subjective depending on individual interpretation of symptoms experienced.

In conclusion this article provides comprehensive data on treatment related adverse effects of different PD-1 or PD-L1 inhibitor based combination therapies however potential biases should be taken into consideration when interpreting results from this study.

# Topics for further research:

* PD-1 inhibitor combination therapy safety
* PD-L1 inhibitor combination therapy adverse events
* PD-1 inhibitor combination therapy efficacy
* PD-L1 inhibitor combination therapy efficacy
* PD-1 inhibitor combination therapy side effects
* PD-L1 inhibitor combination therapy side effects

# Report location:

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