



PAPER COMPETITIONS

Efficacy and Safety of COVID-19 Vaccines for Patients with Solid Cancer: A Systematic Review and Meta-Analysis

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10.52629/jamsa.vi

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Introduction

Cancer patients are among the very high-risk groups who are prioritized for COVID-19 vaccination. However, there is limited information about the COVID-19 vaccination in solid cancer patients and their immune responses to COVID-19 vaccines compared to the general population is not yet known. In this study, we compared the efficacy and safety of COVID-19 vaccines between solid cancer patients and general people through a systematic review and meta-analysis.

Methods

We searched five electronic databases on July 18, 2021. The inclusion criteria for a study were: i) solid cancer patients; ii) receiving at least one dose of COVID-19 vaccine; iii) reporting of anti-spike(S) IgG seropositivity rates (primary outcome) and other efficacy and safety outcomes; and iv) comparing the outcomes between solid cancer patients and general people or within solid cancer patients. We assessed the study quality and pooled the outcomes using relative risks (RRs) and 95% confidence intervals (95% CIs). This review included ten studies, seven for meta-analyses. Almost all participants received the BNT162b2 vaccine.

Results

In comparison to the controls' anti-S IgG seropositivity rates, those of solid cancer patients were significantly lower after the first vaccination (RR = 0.46, 95% CI 0.37 to 0.57) and slightly lower (RR = 0.94, 95% CI 0.91 to 0.96) after the second vaccination.

Conclusion

The BNT162b2 vaccine is relatively safe for solid cancer patients. These patients may have a lower seropositivity rate after the first vaccination. However, the seropositivity rate increases considerably and is comparable to general people after the second vaccination.

Keywords

COVID-19 vaccine, efficacy, safety, solid cancer, systematic review, meta-analysis