DSEN ABSTRACT

Efficacy, effectiveness, and safety of herpes zoster vaccines in adults aged 50 and older: systematic review and network meta-analysis

Summary

Two vaccines against herpes zoster (shingles) are available: a live attenuated vaccine and an adjuvant recombinant subunit vaccine. No trials have directly compared the safety efficacy and effectiveness of these vaccines. The adjuvant recombinant subunit vaccine might prevent more cases of herpes zoster than the live attenuated vaccine. Compared with the live attenuated vaccine, however, the recombinant subunit vaccine might carry a greater risk of adverse events at injection sites.

Implications

There haven't been any head-to-head studies comparing the two shingles vaccines, so the results from our systematic review can be employed by policy-makers, clinicians, and patients to make their decisions on the use of these vaccines.

What is the issue?

- Two vaccines are available in the market to prevent herpes zoster or shingles – the live-attenuated herpes zoster vaccine (live vaccine) and the adjuvant, recombinant subunit herpes zoster vaccine (subunit vaccine).

What was the aim of the study?

- To compare the efficacy, effectiveness, and safety of the live vaccine with the subunit vaccine or placebo/no vaccine for adults aged 50 and older.

How was the study conducted?

- Design: Systematic review with Bayesian meta-analysis and network meta-analysis (NMA). Two reviewers independently conducted screening, data abstraction, and risk of bias appraisal.
- Data Sources: Medline, Embase, and Cochrane Library (inception to January 2017), grey literature, and reference lists of included studies.
- Eligibility criteria for selecting studies: Experimental (e.g., randomized controlled trials), quasi-experimental (e.g., interrupted time series), and observational (e.g., cohort) studies had compared the live vaccine with the subunit vaccine, placebo, or no vaccine in adults aged 50 and older. Relevant outcomes were incidence of herpes zoster (primary outcome), herpes zoster ophthalmicus, post-herpetic neuralgia, quality of life, adverse events, and death.

What did the study find?

- 27 studies (22 randomized controlled trials) including 2 044 504 patients were included after screening 2 037 titles and abstracts, followed by 175 full-text articles.
- The subunit vaccine was found to be 85% more effective in preventing herpes zoster cases compared to the live vaccine (95% credible interval 31% to 98%).
- The subunit vaccine led to 30% more injection-site adverse events, such as redness or swelling compared to the live vaccine (95% credible interval 2% to 51%).
- No statistically significant differences were identified between the two vaccines for serious adverse events and deaths.
- One limitation of the study is that several of the planned subgroup analyses (e.g., age, immune competence) could not be performed due to insufficient data.

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