

Vaccines for preventing herpes zoster in older adults

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ABSTRACT

BACKGROUND: Herpes zoster or, as it is commonly called, 'shingles' is a neurocutaneous disease characterised by the reactivation of varicella zoster virus (VZV), the virus that causes chickenpox, which is latent in the dorsal spinal ganglia when immunity to VZV declines. It is an extremely painful condition which can often last for many weeks or months, impairing the patient's quality of life. The natural aging process is associated with a reduction of cellular immunity which predisposes to herpes zoster. Vaccination with an attenuated form of VZV activates specific T cell production, therefore avoiding viral reactivation. A herpes zoster vaccine with an active virus has been approved for clinical use among older adults by the Food and Drug Administration and has been tested in large populations.

OBJECTIVE: To evaluate the effectiveness and safety of vaccination for preventing herpes zoster in older adults.

METHODS

Search methods: We searched the following sources for relevant studies: CENTRAL 2012, Issue 7, MEDLINE (1948 to July week 1, 2012), EMBASE (2010 to July 2012), LILACS (1982 to July 2012) and CINAHL (1981 to July 2012). We also reviewed reference lists of identified trials and reviews for additional studies.

Selection criteria: Randomised controlled trials (RCTs) or quasi-RCTs comparing zoster vaccine with placebo or no vaccine, to prevent herpes zoster in older adults (mean age > 60 years).

Data collection and analysis: Two review authors independently collected and analysed data using a data extraction form. They also carried out an assessment of risk of bias.

MAIN RESULTS: We identified eight RCTs with a total of 52,269 participants. Three studies were classified at low risk of bias. The main outcomes on effectiveness and safety were extracted from one clinical trial with a low risk of bias. Four studies compared zoster vaccine versus placebo; one study compared high-potency zoster vaccine versus low-potency zoster vaccine; one study compared refrigerated zoster vaccine versus frozen zoster vaccine; one study compared live zoster vaccine versus inactivated zoster vaccine and one study compared zoster vaccine versus pneumococcal polysaccharide vaccine (pneumo 23).

Confirmed cases of herpes zoster were less frequent in patients who received the vaccine than in those who received a placebo: risk ratio (RR) 0.49 (95% confidence interval (CI) 0.43 to 0.56), with a risk difference (RD) of 2%, and number needed to treat to benefit (NNTB) of 50. Analyses according to age groups indicated a greater benefit in participants aged 60 to 69 years, RR 0.36 (95% CI 0.30 to 0.45) and in participants aged 70 years and over, RR 0.63 (95% CI 0.53 to 0.75). Vaccine-related systemic adverse effects were more frequent in the vaccinated group (RR 1.29, 95% CI 1.05 to 1.57, number needed to treat to harm (NNTH) = 100). The pooled data risk ratio for adverse effects for participants with one or more inoculation site adverse effect was RR 4.51 (95% CI 2.35 to 8.68), and the NNTH was 2.8 (95% CI 2.3 to 3.4). Side effects were more frequent in younger (60 to 69 years) than in older (70 years and over) participants.

AUTHORS' CONCLUSIONS: Herpes zoster vaccine is effective in preventing herpes zoster disease. Although vaccine benefits are larger in the younger age group (60 to 69 years), this is also the age group with more adverse events. In general, zoster vaccine is well tolerated; it produces few systemic adverse events and injection site adverse effects of mild to moderate intensity.

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The abstract is also available in the Portuguese, French, Spanish and Russian languages from: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008858.pub2/abstract>.

REFERENCE

- Gagliardi AM, Gomes Silva BN, Torloni MR, Soares BG. Vaccines for preventing herpes zoster in older adults. Cochrane Database of Syst Rev. 2012;10:CD008858.

COMMENTS

Immunosenescence is characterized, among other changes, by a functional decrease in lymphocytes, particularly T lymphocytes, with decreased immune protection and reduced vaccine response. This explains the higher incidence and severity of complications of herpes in this older patients. Despite the low mortality of the disease itself, the presence of pain, which is often intense and long lasting, is also more severe in the elderly population. Herpetic neuropathy may be responsible for limitations on activities and decreased quality of life. Since the treatment, which is primarily through antiviral agents and analgesia, presents variable results, immunization may provide notable support for the elderly. Since the vaccine response among the elderly is also variable and often low, studies on vaccine responses in this population are especially welcome in order to structure primary prevention of this disease.

The authors conducted a systematic review studying vaccination for prevention of herpes zoster in the elderly and located three articles with a low probability of bias. Their analysis on these papers provides the information that vaccination, compared with placebo, is effective in halving the risk of disease, with a benefit in terms of number needed to treat (NNT) of 50. Moreover, vaccination presents relatively low adverse reactions, with a risk in terms of NNT of 100. The younger age group (60-70 years) had a greater vaccine response, as well as higher risk of adverse effects, which is consistent with better immunity than in the older group. This study shows, from the point of view of geriatrics, that there is a tangible benefit from vaccinating the elderly against herpes.

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