

The efficacy and cost-effectiveness of quadrivalent influenza vaccine

Summary

Objectives: To review the recent scientific literature on clinical efficacy and cost-effectiveness of the quadrivalent influenza vaccine to assess whether new evidence have emerged that would require update of HTA12¹ published in 2014. In addition literature of potential new active substances, routes of administration and dosage forms which may be available in the coming years, interventions that might help increase vaccine coverage among the elderly and children, and effects of vaccination in pharmacies were reviewed.

Methods: scientific literature and other sources in the public domain on quadrivalent influenza vaccine published until April 2019 were reviewed. The review was based on papers found in PubMed database and reports recommended by expert from the Health Board of Republic of Estonia. Searches were conducted in April and September 2019.

Results: A search for clinical efficacy of quadrivalent influenza vaccine resulted in 132 papers out of which 5 were included in the review. For cost-effectiveness 41 papers were identified and 9 were included based on evaluation according to Drummond criteria¹¹. Regarding potential new active substances, routes of administration and dosage formulations that could come into use the search was limited to meta-analyses and systematic analyses to obtain the highest level of evidence. To identify interventions that may increase vaccination coverage in the elderly and children literature search provided a total of 17 results out of which 5 were included. To find out how vaccination in pharmacies may affect vaccination coverage a separate search was conducted that provided a total of 93 matches, 6 were included in the review.

Conclusions: Clinical efficacy of quadrivalent influenza vaccine in regard of three matching strains is equivalent with trivalent influenza vaccine and it provides extra protection against the additional B strain in children, adults and the elderly. Safety profiles of quadrivalent and trivalent influenza vaccine are similar. In cost-effectiveness analysis, the transition from a trivalent influenza vaccine to quadrivalent will decrease direct and indirect costs.

Most effective methods for improving vaccination coverage are increasing public awareness, targeted counselling by family doctors and pharmacists, and expanding vaccination options, both in terms of availability (including allowing vaccination in pharmacies) and modes of administration. Partial or full reimbursement of the cost of the vaccine from public funds will also increase vaccination coverage. Knowledge gained in recent years on the effectiveness of influenza vaccination support the assumptions and inputs of the cost-effectiveness calculations in the HTA12 report and thus its conclusions and recommendations remain valid.

Citation: Vaikjärvi M, Sadikova O, Kiivet R-A. *Neljavalentse gripivaktsiini efektiivsus ja kulu-tõhusus*. Tartu: Tartu Ülikooli peremeditsiini ja rahvatervishoiu instituut; 2019.

¹ Võrno T, Maimets M, Lutsar K, Reile R, Stimmer K, Reim M, Kiivet R-A. Riskirühmade gripivastase vaktsineerimise kulutõhusus Eestis. Tartu: Tartu Ülikooli tervishoiu instituut; 2014.

¹¹ Drummond MF, Schulpher MJ, Torrance GW, et al. *Methods for the economic evaluation of health care programmes*. 3rd ed. New York: Oxford University Press; 2005.