Safety and effectiveness of the herpes zoster vaccine to prevent postherpetic neuralgia: 2014 Update and consensus statement from the Canadian Pain Society

Canadian Pain Society Study Day participants*

The Canadian Pain Society (CPS) hosted its first Study Day in Toronto in July 2014, attended by experts in various fields of pain management and research (listed below). The aim was to review the National Advisory Committee on Immunization guidelines and to prepare a CPS position statement concerning the use of the zoster vaccine in Canada.

POSITION 1

The Canadian Pain Society strongly encourages health care practitioners to discuss herpes zoster vaccination with *immunocompetent* patients ≥60 years of age.

Rationale: Before 1996, when a vaccine was introduced, almost all Canadian children (>90%) developed chickenpox, caused by the varicella zoster virus. The virus remains dormant in the dorsal root and the trigeminal ganglia until it is reactivated under certain conditions, causing herpes zoster (HZ, commonly known as shingles). Approximately **20%** of Canadians are expected to develop HZ at some point in their lives. In Canada, **130,000 new cases** of shingles are reported each year. Of these, about **17,000** will go on to develop postherpetic neuralgia (PHN). The estimated annual direct health care cost for HZ and PHN in Canada is approximately $68 million. However, with an aging population, the incidence of HZ and the related costs are expected to increase.

Shingles typically begins as a painful skin rash, usually on one side of the body. Pain may also be present without a rash. Repeat episodes are rare. Complications can include nerve damage, facial paralysis, serious eye infections and other secondary infections. However, the most common and serious complication of HZ is PHN, defined as pain lasting >3 months after the onset of the acute episode.

Age is the greatest risk factor for developing PHN: in the ≥60 years of age group, 13% of those who develop shingles will experience PHN, and approximately 6% of those who develop shingles will experience persistent and unrelieved pain. Greater pain intensity with the initial shingles outbreak is associated with increased risk of developing PHN. Recent studies in the United Kingdom, Europe and Asia have also indicated that some individuals are at risk for stroke following an HZ episode, and the growing awareness of the role of HZ in vascular disease merits further research.

Although the incidence of PHN is low, it has major and long-lasting impacts on health and quality of life (QOL).

Pain due to PHN is often neuropathic and very challenging to treat. Analgesic medications, such as tricyclic antidepressants (eg, amitriptyline, nortriptyline) and anticonvulsants (eg, gabapentin, pregabalin), provide only partial relief. Some patients experience severe lifelong pain, which reduces their QOL, in turn affecting the QOL of their family, friends and colleagues. The impact of mild PHN on QOL can be compared with that of congestive heart failure, and the impact of severe PHN can be compared with that of depression, diabetes, asthma or multiple sclerosis. **Among adults 60 to 69 years of age, the vaccine reduces the chances of getting shingles by 50% and of developing PHN by 66%.** Furthermore, in individuals who still develop shingles after vaccination, the median pain duration is reduced from 24 to 21 days and the severity of the shingles is reduced. The vaccine is safe, with side effects commonly limited to mild local skin reactions. According to the latest estimates, the vaccine protects against shingles for at least seven years; booster shots are not currently recommended.

POSITION 2

The Canadian Pain Society encourages health care practitioners to discuss HZ vaccination with *patients who are at increased risk for shingles*.

Rationale: Conditions associated with increased risk for shingles include:

- lupus;
- rheumatoid arthritis;
- inflammatory bowel disease;
- psoriasis;
- chronic obstructive pulmonary lung disease;
- diabetes;
- cancerous tumours and leukemias;
- asthma;
- use of anti-inflammatory drugs such as corticosteroids, disease-modifying antirheumatic drugs and tumour necrosis factor alpha-sequestering antibodies;
- others.

Whether the vaccine can be given to immunosuppressed individuals with some of the above conditions must be decided by a health professional on a case-by-case basis due to the limited evidence for effectiveness in these populations and potential risks (1). This is a live-virus vaccine. If a decision has been made for the individual to receive the vaccine, it must be given a minimum of one month before immunosuppressive treatment. If indicated, household contacts of immunosuppressed individuals may receive the vaccine.

IMPORTANT: Although individuals with HIV are also at increased risk for shingles, they **should not** be given the vaccine, nor should it be given to individuals who are taking high doses of corticosteroids (>20 mg/day of prednisone) or other immunosuppressive drugs.

POSITION 3

Drug treatment (eg, antivirals, corticosteroids) of active shingles has not been shown to decrease the risk of PHN.

Rationale: Shingles can be treated with antiviral drugs such as acyclovir, famciclovir and valacyclovir. However, these drugs are effective only if given within **72 h** of the first signs of the initial pain or rash. Antivirals have been shown to decrease symptoms during the acute

*Refer to Appendix 1 for the full list of participants

Correspondence: Dr Gilles J Lavigne, Faculty of Dental Medicine, Universite de Montreal, 2900 Ed Montpetit, Montreal, Quebec H3C 3J7. Telephone 514-343-6005, e-mail gilles.lavigne@umontreal.ca

episode, but may not prevent PHN. Corticosteroid or gabapentin use during the acute episode has not been shown to prevent PHN.

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ADDITIONAL RESOURCES

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APPENDIX 1

1. Administration

Health Canada has authorized and recommended the HZ vaccine for individuals ≥60 years of age who are not immunocompromised (see the recommended reading list). Individuals 50 to 59 years of age may also be considered for vaccination. It can be given at the same time (but at a different site) as the pneumococcal vaccine or influenza vaccine. Individuals who have a serious reaction to gelatin or neomycin should not receive the vaccine, nor should individuals who are ill with a fever >38.5°C (101.3°F), have active, untreated tuberculosis, or are pregnant or breastfeeding. The vaccine can be given one year after an initial HZ episode and can also be administered to those who are unsure whether they have had chickenpox. It should not be given to individuals who have received the chickenpox vaccine or are immunocompromised.

Previously, the vaccine had to be kept frozen before use (–15° C), but a new lyophilized vaccine that can be refrigerated (2°C to 8°C) is now available. It is reconstituted with a diluent and must be used within 30 min after mixing. The vaccine is injected subcutaneously, usually in the arm. Depending on the province, the HZ vaccine can be administered by a nurse, pharmacist or physician (Table 1). The vaccine is sold at certain clinics or pharmacies, and some health insurance plans will cover the cost. For insurance purposes, the drug identification number is usually required.

TABLE 1

Health professionals who can administer the zoster vaccine

Province	Physician	Nurse	Pharmacist*
British Columbia	Yes	Yes	Yes
Alberta	Yes	Yes	Yes
Saskatchewan	Yes	Yes	No
Manitoba	Yes	Yes	Yes
Ontario	Yes	Yes	No
Quebec	Yes	Yes	No
New Brunswick	Yes	Yes	Yes
Nova Scotia	Yes	Yes	Yes
Prince Edward Island	Yes	Yes	No
Newfoundland and Labrador	Yes	Yes	No
Northwest Territories, Nunavut and Yukon	Yes	Yes	No

*Note that because conditions are subject to change, this information should be regularly updated. *In some pharmacies, nurses are authorized to administer the vaccine*

The rules for receiving and administering the vaccine differ among Canadian provinces. For example, a prescription is required in Ontario, but not in other provinces.

2. CPS Study Day participants

Panelists selected by the CPS:

- Aline Boulanger MD FRCP MHP, Director, Pain Clinic, Centre hospitalier de l'Université de Montréal, Montreal, Quebec.
- Jason W Busse DC PhD, Assistant Professor. Department of Anesthesia, Department of Clinical Epidemiology & Biostatistics, McMaster University, Hamilton, Ontario.
- Brian E Cairns RPh ACPR PhD, Professor, Faculty of Pharmaceutical Sciences, University of British Columbia, British Columbia.
- Lynn Cooper, President, Canadian Pain Coalition, Toronto, Ontario.
- Hance Clarke MD PhD FRCPC, Director, Transitional Pain Program; Medical Director, Pain Research Unit; Staff Anesthesiologist, Toronto General Hospital; Assistant Professor, University of Toronto, Toronto, Ontario.
- Jacques Laliberté, President, Association québécoise de la douleur chronique, Quebec.
- Gilles Lavigne DMD PhD FRCD, President of CPS and Chair of the CPS Study Day; Canada Research Chair in Pain, Sleep and Trauma; Professor and Dean, Faculty of Dental Medicine, Université de Montréal; Surgery Department, Hôpital du Sacré-Coeur de Montréal, Montreal, Quebec.
- Eric Lessard DMD MD, Centre des Spécialistes Dentaires et Implantologie, Laval, Quebec.
- Fawziah Marra RPh PharmD, Professor, Faculty of Pharmaceutical Sciences, University of British Columbia, British Columbia.
- Margaret McKyes BA DipSpEd BED GDipT, Freelance translator/editor/writer, Montreal, Quebec.
- Sujay Mehta DMD, Doctor of Dental Medicine, Private practice, Vancouver, British Columbia.
- Yoram Shir MD, Professor of Anesthesia, Edwards Chair in Clinical Pain. Director, Alan Edwards Pain Management Unit, McGill University Health Centre, Montreal, Quebec.
- Judy Watt-Watson RN MSc PhD, Past-President, Canadian Pain Society; Professor Emeritus, LSB Faculty of Nursing; Senior Fellow, Massey College, University of Toronto, Toronto, Ontario.

Invited observers from Merck Canada:

- Fern De Angelis, Medical Advisor and MSL Lead.
- Catherine Paquette, Manager, Public Health Policy and Government Relations – Vaccines.
- Caroline Rodier, Medical and Scientific Liaison.