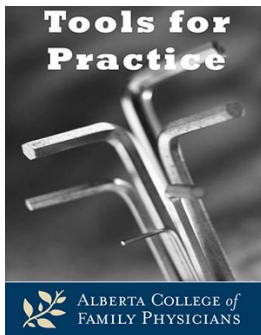


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HPV Vaccine: Shot of Cancer (and Wart) Prevention

Clinical Question: How effective is the Human Papillomavirus (HPV) vaccine in preventing cervical lesions or genital warts (condyloma)?

Bottom-line: HPV vaccine is effective in preventing advanced cervical lesions (CIN \geq 2) in one in 60-125 women and condyloma in one in 40-50 men and women over 3-4 years.

Evidence:

- Focusing on three largest, international, randomized, placebo-controlled trials (RCTs) in women aged 15-26 using modified intention-to-treat analysis (including patients who were HPV positive at baseline), for all HPV lesions.¹⁻⁴
 - Quadrivalent (HPV 6, 11, 16, 18) vaccine (Gardasil[®]):
 - FUTURE 1:¹ 5,455 women followed four years. Decreased:
 - External genital lesions (most commonly condyloma): 3.8% vs. 5.7% (placebo), number needed to vaccinate (NNV)=50.
 - Cervical intra-epithelial lesions (CIN) \geq 2: 6.6% vs. 7.1% (placebo), not statistically significant.
 - FUTURE 2:² 12,167 women followed three years. Decreased:
 - CIN \geq 2: 3.6% vs. 4.4% (placebo), NNV=125.
 - FUTURE 1/2 Combination:³ Followed four years. Decreased:
 - External genital lesions (most commonly condyloma): 1.5% vs. 4% (placebo), NNV=40.
 - CIN \geq 2 not reported.
 - Bivalent (HPV 16, 18 vaccine) (Cervarix[®]):⁴ 18,644 women followed four years. Decreased CIN \geq 2: 3.3% vs. 4.9% (placebo), NNV=60.
 - Smaller studies showed similar effects.^{5,6} All studies:
 - Excluded those pregnant, with previous abnormal pap results or genital warts, or with >4-6 lifetime sexual partners.
 - Funded by vaccine manufacturers.
- Similar relative efficacy seen in males aged 16-26 (for condyloma).⁷

Context:

- Worldwide cervical cancer affects >500,000 women/year, most commonly in developing countries,^{8,9} while in Canada ~1500 women/year are diagnosed.¹⁰

- ~90% of women with cervical cancer have HPV.^{8,9} Women have ~50% chance of becoming HPV positive after three years of sexual activity.¹¹
- Safety: serious adverse event rate similar to placebo.^{1,2,4-7}
- Future longer-term studies will delineate true impact on cervical cancer and whether booster needed.
- Current Canadian recommendations:¹²
 - Gardasil[®]: Girls 9-45 years, boys 9-26 years.
 - Cervarix[®]: Girls 10-25 years.

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Disclosure:

Authors do not have any conflicts to disclose.

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