Safety of HPV vaccination in HIV infected girls

Population : HIV infected girls
Intervention: HPV vaccination
Comparison: Placebo/ no vaccination
Outcome : Severe adverse events following immunization

In girls with HIV (CD4+ ≥15%), what is the (attributable) incidence of serious adverse events for any dose of HPV vaccination?

			Rating	Adjustment to rating
Quality Assessment	No. of studies/starting rating		2/ RCT[1] 1/ observational	4
	Factors decreasing confidence	Limitation in study design	None serious	0
		Inconsistency	None serious	0
		Indirectness	None serious	0
		Imprecision	Serious[2]	-1
		Publication bias	None serious	0
	Factors increasing confidence	Large effect	Not applicable	0
		Dose-response	Not applicable	0
		Antagonistic bias and confounding	Not applicable	0
	Final numerical rating of quality of evidence			**3**
Summary of Findings	**Statement on quality of evidence**			**We are moderately confident in the estimate of effect on health outcome. The true effect is likely to be close to the estimate of the effect.**
	Conclusion			**We are moderately confident that the risk of severe adverse events following vaccination with HPV vaccines of HIV-infected girls is low.**

[1] One small RCT (Weinberg A et al) available as a poster presentation only. No serious safety concerns were detected in this study. The plasma HIV ribonucleic acid (RNA) and CD4 cell per cent fluctuations were similar in HIV-infected vaccinees and placebo recipients and the profile of local adverse events in vaccinees did not differ by HIV infection status. Another small RCT with 126 HIV infected children (with a CD4% ≥15—and on stable antiretroviral therapy if CD4% was <25) (Levin et al.) reported that adverse events were infrequent and their occurrence was similar in the quadrivalent HPV and placebo recipients, except for more frequent (p = 0.19) injection site reactions in quadrivalent HPV recipients. Kahn et al. reported one participant with a severe systemic adverse events (AE) (fatigue). No severe or life-threatening laboratory AEs were evaluated by the team as definitely, probably, or possibly related to the vaccine. Denny et al. assessed the safety and reactogenicity profile of the HPV-16/18 vaccine was comparable in HIV-positive and HIV-negative women.

[2] The studies included only North American children (Weinberg et al. and Levin et al) and North American as well as Puerto Rican children (Kahn et al.), most of whom were on antiretroviral therapy, and may not be representative of other HIV-infected children with more substantial immune compromise due to HIV infection or other factors. In terms of adverse events, for Weinberg et al. the period of observation is short (weeks) and thus no data are available with regard to possible long-term serious adverse events. Denny et al. assessed safety in HIV-positive women (18-25 years) in South Africa.

References

Denny et al. Safety and immunogenicity of the HPV-16/18 AS04-adjuvanted vaccine in HIV-positive women in South Africa: a partially-blind randomized placebo-controlled study. Vaccine. 2013 Nov 19;31(48):5745-53

Levin et al. Safety and immunogenicity of a quadrivalent human papillomavirus (types 6, 11, 16, and 18) vaccine in HIV-infected children 7 to 12 years old.J Acquir Immune Defic Syndr. 2010 Oct;55(2):197-204.

Kahn et al. Immunogenicity and Safety of the Human Papillomavirus 6, 11, 16, 18 Vaccine in HIV-Infected Young Women *Clin Infect Dis. (2013) 57 (5): 735-744*

Weinberg A, et al. Safety and immunogenicity of a quadrivalent vaccine to prevent human papillomavirus (HPV) in HIV-infected children: IMPAACT P1047. Poster 619a presented at the 15th Conference on Retroviral and Opportunistic Infections, Boston, USA, February 3-6, 2008.