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Title: Comparing cervical cytology and histology among human papillomavirus (HPV) vaccinated versus unvaccinated women in an academic colposcopy clinic.

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Abstract Body:

Objective: To analyze differences in cytology and histology results between patients previously vaccinated against human papillomavirus (HPV) compared to unvaccinated patients who presented to an academic colposcopy clinic for evaluation of abnormal cervical cytology.

Methods: Using data from a patient registry from 2007 to 2014, we examined 1,662 age eligible patients. Demographics, HPV vaccination status, smoking, pregnancy history, sexually transmitted infections, number of sexual partners, contraception, immunosuppression, and other relevant medical issues were reviewed. Cytology and histology results were compared between previously HPV vaccinated and unvaccinated women to determine if there is a difference in the severity of subsequent cytologic or pathologic specimens.

Results: Women who had previously received at least one dose of the HPV vaccine were significantly less likely to subsequently develop a high-grade cytology (adenocarcinoma in-situ, atypical glandular cells, atypical squamous cells cannot rule out high grade, and high-grade squamous intraepithelial lesion) or CIN 2/3 or worse histology when compared to HPV unvaccinated women. In multivariable analysis, women who previously received the HPV vaccine were 53% (OR=0.47, 95% CI= 0.34-0.66) less likely to present with high-grade cytology and 36% (OR=0.64, 95% CI= 0.48-0.85) less likely to present with high-grade histology compared to unvaccinated women.

Conclusion: Patients presenting for colposcopic evaluation of abnormal cytology who had previously received the HPV vaccine have fewer high-grade lesions on both cytology and histology results when compared to HPV unvaccinated women.

Further efforts to improve the administration and uptake of the HPV vaccine must be implemented in clinical settings prior to sexual activity to reduce the morbidity associated with HPV infections.