Evaluating the Role of the 9-Valent HPV Vaccine in Preventing Recurrence of Genital Warts

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BACKGROUND

Human papillomavirus (HPV) is the most common sexually transmitted infection worldwide,[1] with most sexually active individuals acquiring infection during their lifetime.[2,3] Low-risk HPV Types 6 and 11 account for the majority of anogenital warts,[4] a condition affecting approximately 1% of sexually active adults at any given time.[5] Although benign, genital condyloma imposes a significant psychosocial and economic burden due to stigma, repeated treatments, and prolonged follow-up.[6] The 9-valent HPV vaccine provides highly effective primary prevention against vaccine-type infection and genital warts in both women and men.[4,7] However, whether vaccination administered after treatment reduces recurrence or the need for additional procedures remains uncertain, with limited and inconsistent evidence in previously infected individuals.[8,9] The authors therefore evaluated clinical predictors of recurrence after CO_2 laser ablation and examined whether post-treatment HPV vaccination is associated with reduced recurrence risk in a real-world male cohort.

METHODS

The retrospectively reviewed men (≥17 years of age) were treated with CO_2 laser ablation for genital condyloma at a tertiary centre (June 2016–June 2025). The primary outcome was recurrence after documented clearance. Logistic and mixed-effects regression models tested associations between post-treatment vaccination and recurrence, adjusting for demographic and clinical factors.

RESULTS

Among 560 patients (722 sessions), recurrence occurred in 28.4%. Those with recurrence were younger (32±10 versus 37±13 years; p<0.001) and more likely to need ≥2 sessions (18.6% versus 11.6%; p=0.02). Post-recurrence vaccination showed no significant association with reduced risk (adjusted odds ratio [aOR]: 0.49; 95% CI: 0.14–1.69; p=0.26). Independent predictors were younger age (aOR: 0.96 per year; p<0.001) and ≥2 sessions (aOR: 2.44; p=0.003).

CONCLUSION

Post-treatment HPV vaccination did not reduce recurrence of genital condyloma. Younger age and multiple treatment sessions independently predicted recurrence, reinforcing vaccination's role primarily in primary prevention.

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