

The Efficacy of Male Circumcision for HPV Prevention

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Background: Male circumcision significantly reduced human immunodeficiency virus (HIV) and herpes simplex virus type 2 (HSV-2) acquisition in clinical trials. We assessed the efficacy of male circumcision for the prevention of human papillomavirus (HPV) infection in HIV-negative men.

Methods: 5534 HIV-negative uncircumcised men aged 15-49 were enrolled into two trials of male circumcision for HIV and STI prevention. A subset of men was evaluated for HPV at baseline and 24 months. Of the 697 men evaluated, 352 had been randomized to receive immediate circumcision (intervention) and 345 to receive circumcision after 24 months (control). HPV testing, physical examination and interviews were conducted at baseline and 24 months. The efficacy of circumcision was assessed by Poisson multivariable regression.

Results: Baseline and follow-up characteristics in intervention and control groups were similar. High-risk HPV prevalence at year two was 18.0% in the intervention group and 27.9% in the control group (adjusted prevalence risk ratio 0.65, 95%CI 0.46–0.90, $p = 0.009$). Multiple high risk HPV infections were detected in 4.3% (10/233) of intervention arm participants and 12.2% (35/287) of control arm participants at the second year follow-up visit (PRR = 0.35, 95%CI 0.17-0.71, $p = 0.004$). The prevalence of non-high risk HPV at the 24 month follow-up visit was also reduced in the intervention arm (26.2%) compared with the control arm (39.4%, PRR = 0.66, 95%CI 0.49-0.91, $p = 0.01$).

Conclusions: In addition to decreasing HIV and HSV-2 acquisition, male circumcision significantly reduces HPV infection, underscoring the potential public health benefits of the procedure.