

Prevalence and determinants of human papillomavirus infection in men attending vasectomy clinics in Mexico

Salvatore Vaccarella¹, Eduardo Lazcano-Ponce^{2*}, José Antonio Castro-Garduño³, Aurelio Cruz-Valdez², Vicente Díaz⁴, Rafaela Schiavon³, Pilar Hernández², Janet R. Kornegay⁵, Mauricio Hernández-Avila² and Silvia Franceschi¹

¹International Agency for Research on Cancer, Lyon, France

²Instituto Nacional de Salud Pública, Cuernavaca, Morelos, Mexico

³Dirección General de Equidad y Género en Salud, Dirección de Salud Reproductiva, Mexico City, Mexico

⁴Fundación Mexicana para la Planeación Familiar, Mexico City, Mexico

⁵Roche Molecular Systems, Inc., Alameda, CA

Large studies of genital human papillomavirus (HPV) infection in men are few and mainly include high-risk groups. We interviewed 779 men who requested a vasectomy in 27 public clinics in 14 states of Mexico. Exfoliated cells were obtained from the scrotum, the shaft of the penis, the top of the penis including the coronal sulcus, the glans and the opening of the meatus. HPV testing was performed using biotinylated L1 consensus primers and reverse line blot. Unconditional logistic regression was used to estimate odds ratios (ORs) of being HPV-positive and corresponding 95% confidence intervals (CIs). The prevalence of any type of HPV was 8.7%. HPV positivity was highest among men below age 25 (13.6%), and lowest among men aged 40 years or older (6.0%). The most commonly found HPV types were, in decreasing order, HPV59, 51, 6, 16 and 58. Lifetime number of sexual partners was associated with HPV positivity (OR for ≥ 4 vs. 1 partner = 3.7, 95% CI: 2.0–6.8), mainly on account of the strong association with number of occasional and sex-worker partners. Condom use with both regular (OR = 0.4, 95% CI: 0.1–1.0) and sex-worker (OR = 0.1, 95% CI: 0.0–0.3) partners and circumcision (OR = 0.2, 95% CI: 0.1–0.4) were inversely associated with HPV positivity. HPV prevalence in Mexican men was similar to the prevalence found in Mexican women of the same age groups. The association between HPV positivity and lifetime number of sexual partners in the present low-risk male population is one of the strongest ever reported in studies in men. Condom use and circumcision were associated with a strong reduction in HPV prevalence.

© 2006 Wiley-Liss, Inc.

Key words: human papillomavirus; men; Mexico; sexual habits; condom use

public clinics in 14 states of Mexico: Baja California Norte, Chihuahua, Nuevo Leon, Sonora, Tamaulipas, Mexico City, Morelos, Mexico State, Jalisco, Michoacan, Campeche, Chiapas, Guerrero and Tabasco.

Individuals were invited to participate by the medical staff and were informed of the purpose of the study and the genital-cell sampling procedure. Only approximately 5% of men invited refused to participate, and thus, a total of 1,043 men were included. Participation was similar in all 14 states. All participants signed an informed consent form, as recommended by the ethics committees of the Instituto Nacional de Salud Pública (INSP) and the International Agency for Research on Cancer (IARC), which approved the study.

Trained interviewers questioned study participants face-to-face using a questionnaire that included information on sociodemographic characteristics, smoking habits, genital hygienic practice and condom use. Information on sexual behavior was also collected and included age at sexual debut and the number and type of female sexual partners (*i.e.*, regular, occasional or sex-worker), and history of sexual intercourse with other men.

Medical examination and specimen collection

Study participants were asked not to wash their genitals for at least 12 hr before the genital examination, which was conducted by specially trained primary care physicians before vasectomy. Circumcision status and the presence of urinary tract symptoms and penile lesions were also assessed by study physicians. Samples were collected using a cytobrush (Cytobrush[®] Plus Sterile.