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Original Study

Cervical Dysplasia and Associated Risk Factors in a Juvenile Detainee Population

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Abstract. *Study Objective:* Canada has licensed a human papilloma virus (HPV) vaccine for adolescent females, with the goal of decreasing the incidence of HPV infection and associated cervical cancer. This study identifies the juvenile detainee population as a high-risk group for HPV infection and therefore an important target for primary prevention.

Design: A retrospective chart review.

Setting: Sundance Juvenile Detention Center, Kingston, Ontario, Canada.

Participants: Female detainees admitted between 2003 and 2006.

Main Outcome Measures: Papanicolaou (Pap) test results, sexually transmitted infection (STI) rates, and associated risk factors were collected from 119 charts.

Results: Of 57 recorded Pap smears, 46 (80.7%) were normal, 5 (8.8%) were reported as atypical squamous cells of unknown significance, and 6 (10.5%) were reported as low-grade squamous intraepithelial lesion. Of the women tested, 4% were positive for gonorrhea, 10% for chlamydia, 32% for bacterial vaginosis, and 5% for trichomonas; none were positive for syphilis. Of the girls, (91) (77%) had negative HIV and hepatitis B tests, two girls were hepatitis-C–positive, three had clinical evidence of genital herpes, and one showed evidence of pelvic inflammatory disease. There were 75 (63%) girls who reported sexual activity; 87% of them used contraception or protection of some kind, albeit inconsistently. Of these young females, 12 (10%) had engaged in prostitution and 13 (11%) had allegedly been raped or sexually assaulted.

Conclusions: Female juvenile detainees in Kingston, Ontario, have higher rates of STIs, associated risk factors, and abnormal Pap tests than the general female adolescent population. This new information confirms that this population is at risk for HPV infection and subsequent cervical cancer.

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Introduction

Adolescents are at high risk for contracting sexually transmitted infections (STIs), and there is a higher prevalence in certain populations, including detainees.[1] Adolescent detainees are known to engage in risky behaviors, putting them at even higher risk for STIs.[2] Many of these same behaviors are also associated with an increased risk for human papilloma virus (HPV) infection and its associated cervical dysplasia.[3]

There have been few data outlining prevalence rates and associated risk factors in female adolescent detainees in Canada, and none have addressed the prevalence of HPV and cervical dysplasia. With the recent Canadian licensure of the HPV vaccine, it is worthwhile to investigate and identify specific at-risk populations because they are an important target for primary prevention.

This study aimed to identify and document the prevalence of cervical dysplasia and associated risk factors in the female juvenile detainee population in Kingston, Ontario. The goal was to advocate for HPV vaccination in this at-risk group.

Methods

Following approval from the Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board, a retrospective chart review was conducted for all female detainees admitted to Kingston's St. Lawrence Youth Association between 2003 and 2006. Data collection included information

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Table 1. Patient characteristics

Number of detainees	119
Age range	11–19 (Mean 16)
Reported sexual activity	75 (63%)
Average age of first sexual intercourse	14
Contraceptive use	87%
Prostitution	12 (10%)
Sexual assault	13 (11%)

from intake histories, Papanicolaou (Pap) smears, and STI testing results. The Surepath liquid-based Pap tests were used on thin preparation. Information about relevant risk factors and high risk behaviors was also evaluated.

Results

Patient characteristics are shown in Table 1. Figure 1 shows the result of 57 recorded Pap smears. Only one detainee was tested for HPV, and she was positive.

The prevalence of STIs in this population is shown in Figure 2. It was also noted that 32% of those tested were positive for bacterial vaginosis and 5% for trichomonas. Three girls had clinical evidence of genital herpes and one of pelvic inflammatory disease. Of those who were sexually active, 87% used contraception or protection of some kind: 32% of them used depomedroxy progesterone acetate, either alone (18%) or in combination with condoms (11%), or they used the patch (3%). The oral contraceptive pill alone was used by 12%, and it was used by 11% in combination with condoms. Other, less popular modalities were the contraceptive ring (1%) and the contraceptive patch (8%). Condoms were used, albeit inconsistently, by 23% as the sole mode of protection.

Discussion

The Centers for Disease Control and Prevention has identified adolescent females as being highly susceptible to STIs.[9] The prevalence is even higher in the detainee population. This population is an obvious target for screening, prevention, and treatment.[1]

Studies in developed countries have shown that a large proportion of adolescent detainees engage in behaviors known to be associated with STIs, including early age of sexual debut, high number of lifetime partners, inconsistent or low rates of condom use, prostitution, and substance abuse, in addition to commonly having been victims of sexual abuse.[10–13] it is not surprising that these risky undertakings have led to higher rates of STIs in adolescent detainees as compared to the rates in the general population of adolescents. In 2005, STI surveillance data was collected from 57 correction facilities in the United States. In adolescent females, median test positivity was 14.2% for chlamydia and 4.7% for gonorrhea, or roughly three and five times higher, respectively, than in control groups in the general population.[14,15] Comparable positivity was found in our study population of detainees: 10% for chlamydia and 4% for

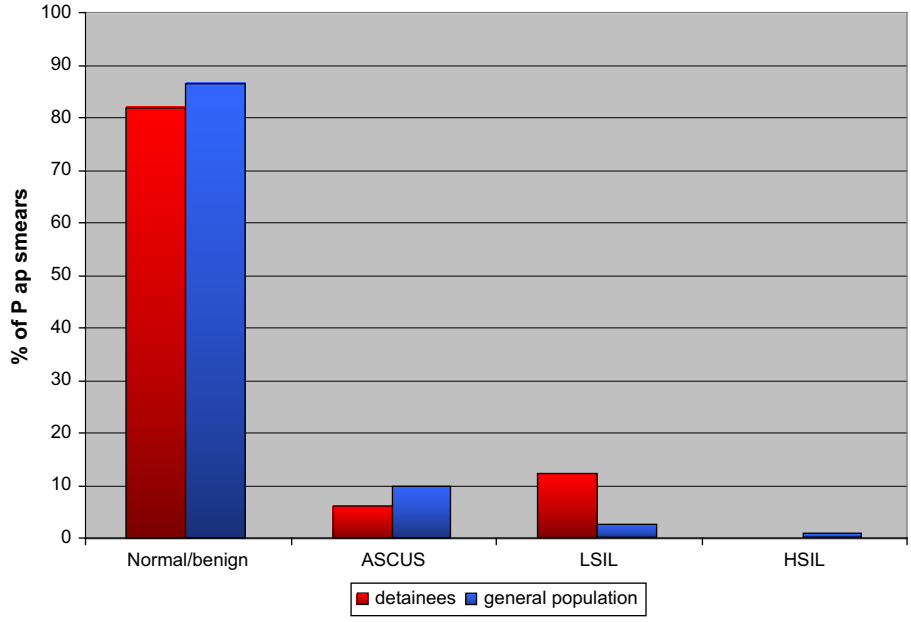

Fig. 1. Cervical cytology results of female juvenile detainees compared to the general population.[4]