SEXUALLY TRANSMITTED DISEASE AMONG ADOLESCENTS IN THE JUVENILE JUSTICE SYSTEM OF THE DISTRICT OF COLUMBIA

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Disenfranchised youth are known to be at high risk for sexually transmitted infections. A study was conducted to validate the screening for sexually transmitted disease (STD) among adolescents under court jurisdiction, to characterize variables associated with STD among this group, and to contrast and compare the characteristics of STD among incarcerated youth as opposed to those in alternative court-sponsored facilities. Sixty teenagers referred to an outpatient adolescent clinic for court-ordered physical examination were tested for infection with syphilis. Fifty-four were tested for gonorrhea and chlamydia. The overall rates for gonorrhea and chlamydia among the group were an identical 9.2%. Six percent of the study population were diagnosed with syphilis infection. While only 17% of the youths were female, they accounted for over half of all infections with gonorrhea and chlamydia. All cases of sexually transmitted bacterial infections were found in youth residing in alternative court-sponsored facilities. (*J Natl Med Assoc.* 1993;85:435-439.)

Key words • sexually transmitted disease (STD) • adolescents • juvenile justice system

This nation's capitol has seen an aggressive upsurge in morbidity and mortality related to high-risk behavior among teenagers. Rates of adolescent arrest and incarceration in the District of Columbia are about seven times the national average. More area teenagers are assigned to alternative court-sponsored residential facilities. These disenfranchised youth, while generally healthy, frequently engage in health-compromising behaviors that threaten their well-being. Sexually transmitted disease (STD) is one direct result of such behavior among detained youth. Prevalence studies have established rates of STD among incarcerated youth that exceed those of the general adolescent population. While the Centers for Disease Control and Prevention reported an incidence rate for gonorrhea of 0.9% among boys and 1.4% for girls between the ages of 15 and 19, Rodriquez and others noted a much higher prevalence: 3% of boys and 18.3% of girls entering a New York City detention facility in 1983 were infected.[1] In Washington state, 18% of girls admitted to a detention center tested positive for *Neisseria gonorrhoeae*.[2] Baker reported a 10% infection rate among a similar population in Los Angeles county.[3]

High-risk adolescents have been overrepresented in the explosion of syphilis in this country. The largest absolute increases have been seen among African-Americans, the poor, and the undereducated. Half of all cases occur between the ages of 15 and 24.[4] Reports on the prevalence of syphilis among incarcerated youth range from 0%[2] to over 2%.[1]

Although chlamydia is known to be an indolent infection with high prevalence and significant morbidity, there have been few if any investigations into its national prevalence. Even fewer figures for the prevalence of chlamydia among high risk adolescents have been reported. Populations of female adolescent pa-

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TABLE. SEXUALLY TRANSMITTED DISEASE AMONG ADOLESCENTS IN THE JUVENILE JUSTICE SYSTEM OF THE DISTRICT OF COLUMBIA

Age	Sex	Residence	Charge	RPR/FTA-ABS	TM	Chlamydia
17	M	Incarcerated	Assault	−/−	−	−
15	M	Group home	Drug	−/−	−	−
17	M	Group home	Drug	−/−	+	−
17	M	Group home	Drug	−/−	−	−
16	M	Incarcerated	Murder	−/−	−	−
16	M	Group home	Drug	−/−	−	−
15	F	Group home		−/−	+	−
14	M	Incarcerated	Theft	−/−	−	−
17	M	Incarcerated		+/+	−	−
16	M	Incarcerated	Drug	−/−	−	−
15	M	Incarcerated		−/−	−	−
12	F	Group home	Assault	−/−	*	*
14	M	Incarcerated	Drug	−/−	−	−
15	M	Group home	UUV	−/−	−	−
17	M	Group home		−/−	−	−
18	M	Group home	Drug/Assault	+/+	−	−
15	M	Group home	Drug	−/−	−	−
16	M	Group home	Assault	−/−	−	−
16	F	Group home		−/−	+	−
16	M	Incarcerated		−/−	−	−
17	M	Group home	Animal cruelty	−/−	−	−
14	M	Incarcerated	Murder	−/−	−	−
15	M	Group home	UUV	−/−	−	−
16	M	Incarcerated	Drug	−/−	−	−
17	M	Group home	Drug	−/−	−	+
14	M	Group home	Robbery	−/−	*	*
16	M	Group home		−/−	−	−
16	M	Group home	Trespassing	−/−	−	−
15	M	Group home	Assault	−/−	−	−
16	M	Incarcerated	Drug	−/−	−	−
18	M	Group home		−/−	−	−
16	M	Incarcerated	Drug	−/+	−	−
17	M	Incarcerated	Drug	−/−	−	−
14	F	Group home		+/+	+	+
13	F	Group home	Runaway	−/−	−	+
14	M	Group home		−/−	−	−
13	M	Group home		−/−	+	−
16	M	Group home	Runaway	−/−	*	*
18	M	Group home		−/−	−	−
18	M	Group home	Drug	−/−	*	*
15	M	Group home	Murder	−/−	*	*
17	M	Group home	Drug	−/−	−	−
15	M	Group home		−/−	−	−
14	M	Group home	UUV	−/−	*	*
17	M	Group home		−/−	−	−
16	M	Incarcerated		+/+	−	−
14	M	Group home	Assault	−/−	−	−
15	M	Group home	Robbery	−/−	−	−
17	M	Group home	Vandalism	+/+	−	+
17	M	Group home	Drug	+/+	−	−
16	M	Group home	Burglary	−/−	−	−
18	M	Group home	Drug	−/−	−	−
18	M	Group home	UUV	−/−	−	−
15	M	Group home	Drug	−/−	−	−
18	M	Group home	Drug	−/−	−	−
15	F	Group home	Drug	−/−	−	−
16	F	Group home		−/−	−	−
16	F	Group home		−/−	−	+
17	F	Group home		−/−	−	−
14	F	Group home	Burglary	−/−	−	−

*Refused genital examination.
Abbreviations: RPR = rapid plasma reagin, FTA-ABS = fluorescent treponemal antibody absorption (tests for syphilis); TM = Thayer-Martin agar (culture for gonorrhea); UUV = unauthorized use of a vehicle.

tients in university hospital clinics screened for chlamydia infections have had prevalence from 8% to 25%.[2] Female adolescents screened for this infection on admission to detention facilities are reported to have infection rates as high as 20% to 33%.[2,3]

The purposes of this study were threefold: to validate the screening for STD, including chlamydia, among adolescents under court jurisdiction, to explore variables that may place these teenagers at risk for sexually transmitted infections, and to describe differences in infection rates among incarcerated youth when compared with those in unlocked residential facilities.

METHODS

This study was conducted at the Children's Center of the District of Columbia General Hospital in Washington, DC, a tertiary center dedicated to the care of the medically indigent in our nation's capitol. The Children's Center provides a gamut of outpatient services through the pediatric emergency room, the medical, well baby, and adolescent clinics, and various subspecialty clinics. There were 12 390 emergency room visits and 8872 clinic visits to the Children's Center in 1990. Nearly 750 patient visits are completed annually in the adolescent clinic.

The adolescent clinic patient population consists primarily of youth seeking contraception, teenagers with STD, and those who have been ordered by the courts to undergo complete physical examination. Health care standards specific for juvenile detention facilities include a comprehensive medical appraisal that is to be completed within 7 days of admission to a court-sponsored facility.[5] This requirement is fulfilled by the court-ordered physical examination.

All youth referred to adolescent clinic by the juvenile justice system for complete physical examination from January 1990 through January 1991 were included in the study. Patients were excluded when their stated objective was something other than compliance with the court order. Each of the teenagers was under the jurisdiction of the Youth Services Administration of the District of Columbia, including incarcerated youth and those residing in alternative court-sponsored residential facilities (group homes). The medical and social histories were obtained, and physical examination was completed by the medical staff of the adolescent clinic, including residents affiliated with the Department of Pediatrics at Howard University Hospital. The medical appraisal for each subject included laboratory evaluation for *N gonorrhoeae, Treponema pallidum,* and *Chlamydia trachomatis.*

Endocervical and urethral specimens were obtained with a cotton swab for isolation of *N gonorrhoeae.* The specimens were incubated on modified Thayer-Martin agar at 32° to 36°C under microaerophilic conditions with 5% to 10% carbon dioxide for 48 hours. Both the nontreponemal rapid plasma reagin test and the more specific fluorescent treponemal antibody absorption test were used to screen for syphilis infection. Patients with reactive treponemal and nontreponemal tests who had not been treated for syphilis within the past year met criteria for diagnosis of current syphilis infection. Chlamydia infection was diagnosed through immunofluorescent analysis of genital specimens for the detection of chlamydial antigen.

The medical record of each patient was reviewed at the end of the study period, and the following data were noted: age, sex, residence (locked facility or alternative residential assignment), current legal charge (if noted) and presence or absence of either of the three aforementioned sexually transmitted diseases. The occurrence of STDs among females was compared to males; those with drug-related charges were compared to those with other indictments; and those who were incarcerated were compared to those in alternative unlocked facilities. Finally, characteristics of court-supervised adolescents with STD were described.

RESULTS

From January 1990 through January 1991, 60 teenagers were referred to the adolescent clinic in the Children's Center from court-sponsored facilities for comprehensive physical examination. Each was under the jurisdiction of the city's juvenile justice system, residing either in a locked facility or in an alternative court-sponsored residential facility within the District of Columbia at the time of examination (Table).

Fifty males and 10 females comprised the study group. All of the females and 77% of the males were assigned to an unlocked residential facility. Subjects ranged from 12 to 18 years of age with a mean age of 15.7 years.

The legal charge against the teenager at the time of examination was noted in 42 (70%) of the medical records. Twenty were charged with drug-related offenses; 10 with violent crime, including one charge of animal cruelty; 9 teenagers were charged with offenses involving property (vandalism, theft, burglary); 2 were in custody because of runaway behavior; and one was charged with trespassing.

Six patients refused genital examination and were not tested for gonorrhea or chlamydia. Among the 54 who

were tested, the rates of chlamydia and gonorrhea were an identical 9.2%. Serologic testing for syphilis was performed on 100% of the patients in the study group. Six percent were diagnosed with syphilis infection.

Incarcerated youth comprised 23% of the study group. None refused genital examination, and all were tested for gonorrhea, chlamydia, and syphilis. No cases of gonorrhea or chlamydia were found among these patients. The two incarcerated adolescents with positive serologic tests for syphilis represented 33% of all cases of syphilis.

Forty-six subjects resided in alternative court-sponsored unlocked facilities. Six refused genital examination. The infection rate for gonorrhea and chlamydia among those tested was identical (12.5%). Four of these youth had positive serologic tests for syphilis (8.7%). All cases of gonorrhea and chlamydia and 67% of all cases of syphilis in the study population were detected among subjects residing in alternative unlocked facilities.

Of the 43 subjects who divulged his or her alleged infraction, 19 males and one female were charged with drug-related offenses (46.5%). One of these subjects refused genital examination and was not tested for gonorrhea or chlamydia. Among those who were tested, one case each of gonorrhea and chlamydia were diagnosed for an identical rate of 5%. Two cases of syphilis were recognized among youth facing drug-related charges. Twenty percent of gonorrhea and chlamydia and 33% of all cases of syphilis were detected among teenagers charged with drug-related offenses.

Of the 10 young women in the study population, one refused genital examination. Of the 9 tested, 3 had cervical cultures positive for gonorrhea, and 3 were infected with chlamydia. Ten percent of all females were diagnosed with syphilis infection. Females comprised 17% of the study population, but accounted for 60% of all chlamydia, 60% of all gonorrhea, and 16.7% of all syphilis.

DISCUSSION

Children who are under the jurisdiction of the juvenile justice system in the District of Columbia are at significant risk for sexually transmitted infections. Risk variables for these adolescents include the high prevalence of STD in the city; the association of drug-related activities to high-risk sexual behavior; and the epidemiologic overrepresentation of poor black youth with sexually transmitted infections.

In 1989, the District of Columbia was ranked second by the Centers for Disease Control in reported cases of syphilis and penicillin-resistant gonorrhea nationwide. The number of court-supervised adolescents with untreated syphilis in this study exceeds previous reports. The escalation of the number of cases of syphilis has been attributed in part to the growing practice by drug abusers of exchanging sex for drugs.[4] Forty-six percent of juvenile referrals to the District of Columbia courts in 1988 were related to acts against public order, a listing that includes the possession and sale of marijuana and narcotics.[6] The same percentage of youths in this study were charged with drug-related offenses. All but one of these teenagers were male. With the well-publicized "drug epidemic" in the city, it is likely that a significant portion of the young women in the study had been sexual partners of drug dealers.

Young women contributed proportionately to the incidence of STD. While only 17% of the youths referred by the courts for examination were female, they accounted for over half of all infections with gonorrhea and chlamydia. These findings have extensive ramifications. Morbidity related to STD in females includes upper genital tract involvement, risks for ectopic gestation or tubal infertility, and the vertical transmission of congenital infection. All of the females in this study resided in alternative unlocked court sponsored facilities, thus creating epidemiologic concern for their sexual contacts in the community.

Poor minority youth are less likely to have a regular source for health care, and they are generally more at risk for sexually transmitted infections. Gonorrhea rates among sexually active black 15- to 19-year-olds are five to six times greater than among their white cohorts.[7] Syphilis is an infection of the poor and undereducated. Like syphilis, chlamydia can be an indolent, smoldering, often subclinical condition. Young people who are detained by the juvenile justice system have customarily been underserved and largely ignored by medicine and society. Sexually transmitted disease is just one measure of this neglect.

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