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IDCR, a forum for correctional problem solving, targets correctional physicians, nurses, administrators, outreach workers, and case managers. Published monthly and distributed by email and fax, IDCR provides up-to-the moment information on HIV/AIDS, hepatitis, and other infectious diseases, as well as efficient ways to administer treatment in the correctional environment. Continuing Medical Education credits are provided by the Brown University Office of Continuing Medical Education. IDCR is distributed to all members of the Society of Correctional Physicians (SCP) within the SCP publication, CorrDocs (www.corrdocs.org).

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HIV INFECTION AMONG WOMEN IN PRISON: CONSIDERATIONS FOR CARE

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***DISCLOSURES:** *Nothing to disclose*
***Nothing to disclose*

HIV has a Woman's Face

According to Nelson Mandela, who spoke about the disproportionate burden of HIV infection on women at a recent event in South Africa, the world wide epidemic of HIV is *taking on the face of a woman*.[1] Due to their status in society and for physiological reasons discussed in greater detail below, women are disproportionately at risk for HIV infection, and this is particularly true for women who are incarcerated.

The overall prevalence of HIV infection among U.S. women is approximately 0.2%; incarcerated women are 15 times more likely to be HIV-infected compared to women in the general population. In several states, nearly one in 10 incarcerated women are HIV-infected. At yearend 2002, 3% of all incarcerated women in U.S. state prisons were HIV-infected, compared to 2% of incarcerated men in U.S. state prisons (Table 1.) More than 10% of female inmates in two states (New York and Maryland) were known to be HIV-infected.[2]

Social Factors

Incarcerated women have higher prevalence rates of HIV infection than incarcerated men because the behaviors for which they are incarcerated put them at risk for HIV infection.[3,4] They are often injection drug users (IDUs), sexual partners of IDUs, have supported themselves through sex work, and more often than not, they have been forced to have (unprotected) sex or trade sex for housing and food.[5] Women who are more likely to be HIV-infected in the U.S. also belong to subgroups of the population that are at increased risk of incarceration: women living in poverty, women who lack marketable job skills,[6] and certain ethnic groups (African American, Hispanic). Many of the women at highest risk for HIV infection are unaware of their risk, have little or no access to HIV prevention, and are afraid, for fear of violence, to ask their partners to use condoms.[7]

These risk factors are clearly demonstrated in one of the most recent published studies of incarcerated women. Researchers in Brazil interviewed and evaluated 290 incarcerated females and found prevalence rates for HIV, hepatitis C virus (HCV), and syphilis of 13.9%, 16.2%, and 22.8%, respectively. The most significant risks for HIV infection included HIV-infected sexual partners, casual partners, partners who inject drugs, and a history of sexually transmitted infections (STIs). Even women with a single sex partner presented a significant risk for HIV infection, reflecting their vulnerability for acquiring HIV infection, most likely due to their trust in their partner who did not use a condom. While the use of injectable drugs was associated with HIV infection, the study results pointed to sexual behavior as the most important component of HIV transmission in the incarcerated female population.[8]

Mental Health Factors

Mental illness is a common co-morbidity for HIV-infected incarcerated women. A number of studies have linked prior childhood experiences of abuse and neglect with women's healthcare needs, mental health needs, and HIV risk behaviors. According to self-reported data, 33%-65% of incarcerated women in the US report prior sexual abuse and 19%-42% report a history of childhood sexual abuse.[9,10] These percentages are likely under-representative of the prevalence of abuse histories among incarcerated women, but they are still two-fold higher than the prevalence of such histories among women who are not incarcerated.

Mental health problems contribute to the high prevalence of HIV infection among incarcerated women and make the management of their HIV care substantially more challenging. In a recent US study, 25% of women discontinued highly active antiretroviral therapy (HAART) for at least

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six months during study follow-up of five years, and women who discontinued HAART were more likely to be depressed than those who did not discontinue medication.[11] Access to treatment for depression may be helpful for improving the management of HIV-infected incarcerated women.

Since many incarcerated women have experienced childhood sexual abuse and adult sexual trauma, gynecological and obstetric examination takes special care and sensitivity. Some of the issues that may interfere with the examination of sexually abused women include their need to trust the examiner, their need for control (wishing to control the time and place of the exam), their fear of disclosure, and their fear of having their body touched during the exam.[12] Sensitive gynecological healthcare providers are critically important members of the correctional HIV management team.

Biological Factors

HIV transmission estimates vary by the type of exposure. Per-event transmission probability estimates are 0.7% (about one in 150) per episode of intravenous needle or syringe sharing, and 0.09% (less than one in 1,000) after a mucous membrane exposure (such as a splash to eyes or mouth). The risk for HIV transmission per episode of receptive penile-anal sexual intercourse is estimated at 0.1%-3.0%, while the risk per episode of receptive vaginal intercourse is estimated at 0.1%-0.2%. While published estimates of the risk for HIV transmission from receptive oral exposure do not exist, instances of suspected transmission have been reported.[13,14]

Data has suggested that men with HIV infection are biologically more likely to transmit HIV than women, due to increased genital shedding of HIV-1, leading to the thought that male-to-female transmission is more efficient than female-to-male transmission during asymptomatic infection (early in HIV disease). However, the risk of transmission during symptomatic infection does not appear to vary.[15] In a recent study in Uganda, plasma HIV RNA levels and genital ulcer disease, but not gender, were the main determinants of HIV transmission[16]. There is also recent data that shows higher levels of HIV in semen versus female genital tract secretions. Collectively, these data may suggest that women are at a greater risk for infection as compared to men.

Additionally, incarcerated women, in general, and HIV-infected incarcerated women in particular, have remarkably high rates of STIs and gynecologic infections, which are associated with higher risks of HIV infection.[15] At yearend 2003, 1.8%, 6.3%, and 7.5% of incarcerated women tested positive for gonorrhea, chlamydia, and syphilis, respectively.[17] In younger women, cervical ectopy (extra mucosal tissue around the entry to the cervical canal) makes the cervix more vulnerable to HIV infection.[18]

High rates of STIs are associated with high risk for HIV infection for three main reasons:

1. Unprotected sex that results in the transmission of an STI can also result in HIV transmission.
2. STIs can cause genital lesions and recruit white blood cells to the region which may increase a person's susceptibility to HIV infection.
3. Persons who are co-infected with HIV and an STI may have increased HIV shedding in genital secretions, thereby increasing the chances that the co-infected person will infect another person if he or she engages in unprotected sex.

High rates of syphilis among incarcerated women have prompted a number of studies assessing methods of syphilis screening and treatment in the correctional setting. Several studies have shown the efficacy of administering qualitative rapid plasma reagin (RPR) testing for syphilis.[19,20] A study conducted at a New York City jail found that qualitative nontreponemal syphilis testing, online access to the local syphilis registry, and immediate treatment (if indicated), following admission, increased the rate of syphilis treatment from 7% to 84% of cases.[21]

Table 1: HIV Prevalence in U.S. Prisons

HIV by Gender in 2002	Male HIV Cases*		Female HIV Cases	
Jurisdiction	Number	Percent	Number	Percent
Federal	1,431	1.1	116	1.2
State	19,297	1.9	2,053	3.0
Connecticut	563	3.3	103	7.2
New York	4,590	7.2	410	13.6
Georgia	1,023	2.3	100	3.2
Florida	2,508	3.6	340	7.4
Texas	2,261	1.8	267	2.7
Nevada	98	1.01	15	4.2

**HIV testing is not mandatory in most states. Therefore, the prevalence of HIV infection is likely to be significantly underreported. Data derived in Table 1 from Maruschak, 2004.*

Table 2: FDA-Approved HIV Rapid Tests[xxiii]

HIV Rapid Test	Notes
Ora-Quick Advance HIV-1/2 Antibody	◆ Store at room temp ◆ Screens for HIV-1 and -2 ◆ Results in 20 mins
Uni-Gold Recombigen HIV	◆ Store at room temp ◆ Screens for HIV-1 ◆ Results in 10 mins
Reveal Rapid HIV-1 Antibody	◆ Reagents need reconstitution and refrigeration ◆ Screens for HIV-1 ◆ Results in 5 mins
Multispot HIV-1/HIV-2	◆ Reagents need refrigeration ◆ Screens for HIV-1 and HIV-2 ◆ Results in 15 mins
Murex SUDS HIV-1	◆ Screens for HIV-1

**95% Confidence Interval*

Testing for or making a diagnosis of an STI provides an important opportunity for healthcare providers to counsel inmates about the issue of HIV transmission. HIV testing should be offered at each HIV encounter. Rapid HIV testing (Table 2) is a particularly important tool for getting HIV-infected women into care; more than 98% of individuals are able to receive their test results and most enter care following rapid test diagnosis.[22]

Incarcerated Women and Motherhood

Between 1998-1999, 1,400 women gave birth within prisons. During this time, in Georgia alone, more than 150 women who entered prison were pregnant.[24] Both the number of HIV-infected women giving birth in prisons and the extent of prenatal screening for HIV infection that is performed in federal and state prisons are unknown at this time. Even though mother-to-child transmission (MTCT) of HIV has been all but eradicated in the U.S., MTCT still occurs among high-risk women who seek care late in the course of pregnancy. Between 280-370 U.S. babies continue to be born each year with HIV infection.[25] Prior to the institution of MTCT prevention, transmission from HIV-infected mother to child ranged from 16%-25% in North America and Europe. Today, the risk of perinatal transmission can be less than 2% with effective antiretroviral therapy (ART), elective cesarean section as appropriate, and formula feeding.

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The correctional setting clearly provides a critical opportunity to reach women who may not have accessed pre-natal testing in the community and routine pre-natal screening in correctional settings may be cost-effective.[26] According to standards set forth by Centers for Disease Control and Prevention (CDC), thorough and non-judgmental discussion of HIV testing and ART is a required component of all pre-natal care.[27]

Certain aspects of long-term incarceration, such as shelter, food, and sobriety may be health promoting for high-risk pregnant women and have been reported to improve their pregnancy outcomes.[28]However, few correctional facilities allow women to house their infants in a nursery at the institution after delivery (residential programs for infants exist in only 11 states and select federal facilities). Most correctional facilities remove newborns from their mothers during or immediately after the hospital stay.

Most incarcerated women are mothers and were the custodial parent of a minor child prior to incarceration. In 1998, 70% of women in jails, 65% of women in state prisons, and 59% of women in Federal prisons had at least one child under the age of 18 at home. The total number of minor children whose mothers were in federal or state prisons increased from 61,000 in 1991 to 110,000 in 1998. In 1998, 84% and 64% of minor children whose mothers were in federal and state prisons, respectively, lived with their mothers before their mothers entered prisons. Women are allowed to receive visits by their children. However, these visits are infrequent; 56% of women do not see their children at all while they are incarcerated.[29] The impact of this separation on the wellbeing of the mother and the bond between the mother and infant deserves further study.

Incarcerated women at Risk for Hepatitis

The prevalence of HCV is much greater among incarcerated populations than the general public. The incidence of HCV in the US general population has been estimated at 1.8%, while the incidence among state and federal facilities in 1999 was 2.1%. Incarcerated females typically have high rates of HCV infection. In 1994, 63.5% of female inmates entering the California correctional system were found to be anti-HCV positive, compared to 39.4% of male inmates.[30] Testing for and appropriately treating HCV and hepatitis B virus (HBV) co-infection among incarcerated females should be a routine component of HIV care.[31] For more information on testing and treating HCV and HBV, please refer to CDC's Sexually Transmitted Diseases Treatment guidelines - 2002.[32,33]

Managing HIV infection

Because incarcerated women have a high prevalence of HIV infection, multiple sources of HIV risk in their lives, and limited access to HIV testing and counseling services outside of prison or jail, there should be multiple opportunities for women to say "yes" to HIV counseling and education while they are incarcerated (Table 3.) However, the incarcerated woman's fear of stigmatization by her peers and correctional staff can have a negative impact on the detection and management of HIV/AIDS in prisons and jails. The closed setting of correctional institutions makes confidentiality difficult to maintain (particularly if a clinic or care provider is identified as being associated with HIV), though total confidentiality should always be the goal. Peer HIV/AIDS education programs may reduce stigmatization among prisoners and increase the general awareness of HIV in the incarcerated female population.[34]

Factors that are likely to encourage incarcerated women to become tested include concern about the impact of HIV infection on their present or future children, and about having contracted HIV infection in the context of having acquired other STIs. Many incarcerated women may have been tested for HIV during prior pregnancies and may therefore be familiar with the concepts and procedures related to HIV testing. However, younger women (with fewer arrests, fewer pregnancies, and fewer opportunities to interact with HIV testers and counselors) may be less familiar with the concept of HIV testing, and hence, more fearful.

Table 3: HIV Education/Testing

HIV education and testing services should be offered on multiple occasions to women who:

- Are pregnant or who are seeking pregnancy testing
- Have a current or prior STI diagnosis
- Have abnormal pap smear test results
- Have HBV or HCV
- Have a history of sex work
- Have a history of sexual abuse
- Have a history of drug use
- Have partners who use drugs

In many facilities the list of "risk factors" will include virtually every female prisoner in the institution. With HIV/AIDS prevalence rates approximately 15 times higher among incarcerated women compared to the general population, HIV testing should be regularly offered and easily available to all women prisoners.

Considerations for Care

Ideally, correctional management of HIV would include a network of interconnected services that would address the needs of HIV-infected incarcerated women. These services might include clinical medical services, physical and sexual abuse recovery programs, drug treatment, and mental health services. They may also include vocational training and skills building workshops that, by helping women to become socio-economically more powerful, facilitate their ability to continue to effectively manage their healthcare needs and to prevent HIV transmission upon prison release. The opportunity to test and treat HIV-infected pregnant women who are incarcerated should not be missed. Finally, discharge planning programs initiated during incarceration can help connect women to community medical services, drug treatment, support services that provide child care, safe affordable housing, job training and employment opportunities that will all serve to increase their ability to continue to care for their own health needs. Incarceration provides a critical opportunity for the education, diagnosis, and medical care of HIV-infected women and high-risk HIV seronegative women, as well as a critically important public health opportunity to reduce the spread of HIV.

Recommended Reading and Resources

Bloom B, Owen B & Covington S. Gender Responsive Strategies: Research, Practice, and Guiding Principles for Women Offenders. 2003. Washington, DC: National Institute of Corrections.

Boudin K, Carrero I, Clark J, Flournoy VV, Loftin K, Martindale S, Martinez M, Mastroieni E, Richardson S. ACE: A Peer Education and Counseling Program Meets the Needs of Incarcerated Women With HIV/AIDS Issues. Journal of the Association of Nurses in Aids Care. 1999 10(6):90-98.

Browne A, Miller B, Maguin E. Prevalence and severity of lifetime physical and sexual victimization among incarcerated women. Int J Law Psychiatry. 1999; 22:301-322.

De Groot AS & Cuccinelli D. "Put her in a cage: Childhood sexual abuse, incarceration, and HIV infection" in The Gender Politics of HIV in Women: Perspectives on the Pandemic in the United States. J Manlowe & N Goldstein, eds. 1997. New York: New York University Press.

Women, Children, and HIV Web site (http://WomenChildrenHIV.org): The François-Xavier Bagnoud (FXB) Center at the University of Medicine and Dentistry of New Jersey, and the University of California San Francisco's Center for HIV Information created this website, which contains a com-

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ASK THE EXPERT: An HIV-infected inmate with an abnormal cervical Pap test

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Disclosures: **Nothing to disclose.*

CASE: *A 30 year-old female inmate, G4P2, presents to the prison diagnostic intake clinic with a history of A2 HIV infection, last approximate CD4 count 350 cells/µl and HIV-1 quantitative viral load (VL) 50,000 copies/ml, for which she is taking no medications and is antiretroviral therapy (ART)-naive. She has a four-year sentence and a history of heroin dependence. Her last Pap was performed approximately four years ago when she was diagnosed with HIV, and she thinks it was normal. She reports being treated for chlamydia when diagnosed with HIV. Her ex-husband was HIV-infected and is now deceased. She reports no sex partners for at least 12 months.*

On physical exam, vital signs are normal, and she appears well nourished. She has no evidence of oral thrush or lymphadenopathy, her skin is normal, and her chest, breast, and abdominal examinations are normal. Pelvic exam is notable for watery, grayish vaginal discharge with a fishy odor, though on gross examination her cervix and vaginal wall appear normal. Cells are collected from her cervix using a spatula and cytobrush and a slide for conventional Pap test is prepared. A swab of the discharge from her vaginal wall is also collected. The vaginal pH is 6.0, and the wet mount shows few lactobacilli. Laboratory tests to confirm her T cell count, HIV-1 viral load, electrolytes, and renal/hepatic function, and to screen for hepatitis A,B,C, syphilis, chlamydia, gonorrhea, toxoplasmosis, and CMV are obtained.

Q: *What is the cause of her vaginal discharge and how should it be treated?*

A: She has bacterial vaginosis (BV), in which an overgrowth of bacterial species (such as Gardnerella, Bacteroides, Mycoplasma, Mobiluncus, and Peptostreptococcus) normally present in the vagina occurs. BV correlates with loss of protective (peroxide-producing) lactobacilli normally present in the vagina, thereby raising the vaginal pH above normal (>4.5). In non-pregnant women, BV is usually treated with metronidazole at 500 mg po twice daily for seven days (250 mg po three times daily for seven days in pregnancy). Of note, in a recently published observational cohort study by Watts, et al., the authors report that BV and Trichomonas vaginalis infection may increase the risk of acquisition (or reactivation) of HPV infection among HIV-infected and high-risk HIV-uninfected women.

She returns to clinic for follow-up of test results three weeks later. Her CD4 count is 334 cells/µl with HIV-1 VL of 85,000 copies/ml. Her Pap report states that it is "satisfactory for evaluation" and shows "atypical squamous cells of undetermined significance (ASC-US)". Other tests ordered are normal and show no evidence of hepatitis, syphilis, gonorrhea, or chlamydia.

Q: *How should her cervical cytology (ASC-US Pap) be managed? Would ordering an HPV test be helpful?*

A: This inmate should be referred for colposcopic examination since she is HIV-infected and has an abnormal Pap, even if it is only mildly abnormal. Also, even if the colposcopy is normal, she should have a repeat Pap in six months since she has had only one Pap since her diagnosis of HIV, and this was at least four years ago. Women at highest risk of cervical cancer in the U.S. are those who are not properly screened for cervical cancer. Because cervical cytology is only, on average, 60% sensitive in detecting moderate to severe cervical intraepithelial neoplasia (CIN grade 2/3) or cancer, other screening

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prehensive, Internet-based library of practically applicable materials on mother and child HIV infection including preventing mother-to-child HIV transmission (PMTCT), infant feeding, clinical care of women and children living with HIV infection, and the support of orphans.

REFERENCES:

1. Aids 'carries the face of a woman'. South African Press Association - March 20, 2005
2. Maruschak, L. Bureau of Justice Statistics. December 2004. NCJ 205333. Full document available at: www.ojp.usdoj.gov/bjs/abstract/hivpj02.htm
3. De Groot, A. AIDS Reader. 2000; 10(5): 287-95.
4. Fogel C, Belyea M. Journal of the Association of Nurses in AIDS Care. 1999; 10(6): 66-74.
5. Stevens J, DeGroot A, Mayer K. Journal of Women's Health. 1995; 4(5); 569-77.
6. Zierler S, Krieger N. Annual Review of Public Health. 1997; 18:401-36.
7. Gruskin L, Gange SJ, Celentano D, et al. Urban Health. 2002; 79(4):512-24
8. Strazza L, Azevedo R, Massad E. Braz J Med Biol Res. 2004; 37(5):771-6.
9. Johnson JC, Cohen P, Brown J et al. Archives of General Psychiatiry. 1999; 56(7): 607-08.
10. Richie E, Johnson C. Journal of American Medical Women's Assocation. 1996; 51:111-17.
11. Ahdieh-Grant L, Anastos K, Cohen M. JAIDS. 2005.
12. Dole, P. HEPP News 2(6), June, 1999. HIV Education Prison Project, Brown University. http://www.HIVcorrections.org/
13.CDC. MMWR. 1998; 50(RR-17):1-14.
14.
15. Pilcher et al. JID. 2004; 189:1785-92.
16. Wawer M, Gray R, Kiddugavu, M. JID. 2005; 191:1403-9. CDC. MMWR. 2003; 52(RR12):1-24.
17. CDC. National Data on Chlamydia, gonorrhea, and syphilis. 2005. http://www.cdc.gov/std/stats/trends2003.htm. Last accessed April 19, 2005.
18. Reyes, H. World Health Organization-Europe Health in Prisons Project. 2001; 9:193-218.
19. Beltrami JF, Cohen PA, Hamrick JT, et al. AJPH. 1997; 87(9): 1423-6.
20. CDC. MMWR. 1998; 47(21): 423-3.
21. Blank S, McDonnell DD, Rubin SR, et al. Sex Transm Dis. 1997; 24(4): 218-26.
22. Kendrick S, Kroc K, Couture E, et al. AIDS. 2004;18(16):2208-10.
23. Branson, B. Rapid HIV testing: 2005 update. www.cdc.gov/hiv/rapid_testing/ Last accessed April 20, 2005.
24. de Ravello L, Brantley MD, Lamarre M, et al. Sex Transm Dis. 2005; 32(4):247-251.
25. Lindegren ML. JAMA. 1999; 282(6):531-8.
26. Resch S, Altice FL, Paltiel AD. J Acquir Immune Defic Syndr. 2005; 38(2):163-73.
27. CDC. MMWR. 1995; 44(RR-7);1-15.
28. Martin SL, Rieger RH, Kupper LL, et al. Public Health Rep. 1997; 112(4): 340-6.
29. Greenfield, L. & Snell, T. Bureau of Justice Statistics. 2000.
30. Ruiz J, Molitor F, Plagenhoef, J. AIDS. 2002; 16(16):2236-8.
31. Solomon L, Flynn C, Muck K, et al. J Urban Health. 2004; 81(1):25-37.
32. CDC. MMWR. 2002; 51(RR06):1-80.
33. Editor's Note: IDCR will address HCV among incarcerated populations (and women) in greater detail in an article scheduled for publication next month (June 2005).
34. Members of the ACE Program of the Bedford Hills Correctional Facility. Breaking the walls of silence: AIDS and women in a New York State maximum-security prison. Woodstock, NY 1998: Overlook Press.

ASK THE EXPERT... *(continued from page 4)*

strategies, such as HPV DNA testing, are recommended for use in some specific clinical scenarios relating to immunocompetent women. However, studies, though limited, have shown that HPV DNA testing in HIV-infected women may not be cost-effective or as clinically meaningful compared to testing in immunocompetent women. Therefore, in the 2001 ASCCP guidelines for the management of women with cytological abnormalities, it was recommended that all HIV-infected women (regardless of CD4 count or HIV-1 VL) with any cytological abnormality, including ASC-US, be referred for colposcopy, in order to ensure accurate and timely detection of CIN 2/3 or cancer. Detection of DNA for oncogenic HPV types among HIV-infected women with ASC-US is more common than among HIV-uninfected women, and therefore, does not appear to be a cost-effective strategy for determining who in this population should go to colposcopy.

Q: *Should this patient, who is largely asymptomatic from HIV infection, be treated with ART?*

A: According to the recently revised 2004 DHHS ART guidelines, treatment for this ART-naïve, asymptomatic inmate with a CD4 count that is now <350 cells/µl should be offered. If her CD4 count was >350 cells/µl, treatment could be deferred since her VL is <100,000 copies/ml. It is unclear whether initiation of ART would aid in regression of cervical disease, by way of decreasing HIV-1 viral load and increasing CD4 count. Prospective or randomized trials properly designed to address this issue have not been published, and the data that exists is conflicting. Of note, having cervical dysplasia does not make a woman "symptomatic" from HIV disease, though this may change in the future.

DISCUSSION

Human papillomavirus (HPV), which is the most common sexually transmitted infection, causes cervical dysplasia and squamous cell cancer. In 1999, Massad, et al. reported the prevalence of abnormal cervical screening cytology among HIV-infected women to be approximately 38%. Published reports on ASC-US cytology among HIV-infected women suggest a 14-15% risk for CIN 2/3, and a more recent study showed that HPV DNA testing in this population may not be sensitive enough to use as a triage strategy for detecting CIN 2/3.

Cervical cancer screening guidelines for HIV-infected women have not been revised since 1995 and only state that these women should have two Pap tests performed six months apart in the first year of the initial HIV diagnosis. If Pap results for both are normal, they can then go to annual cytological screening. A published report by Goldie, et al. suggests that HPV DNA testing may be cost effective if performed in conjunction with primary cervical cytological screening of women in the first year of HIV diagnosis and then, if either is positive, used to triage women who undergo more intensive screening thereafter (e.g. six month intervals verses annually). However, this published report was a cost modeling study and has not been tested in a prospective or randomized clinical trial. In a recent observational cohort study by Harris, et al., the authors showed there to be a similar cumulative incidence of any cytological abnormalities, over three or more years, among HIV-seronegative and HIV-seropositive women (CD4 counts greater than 500 cells/µl) who had normal cytology and negative HPV DNA tests at baseline. These findings suggest that among HIV-infected women with relatively preserved immune function (i.e. CD4 counts >500 cells/µl), cervical cancer screening guidelines for immunocompetent women, may apply. However, these findings need to be confirmed in a properly designed formal clinical trial. Therefore, until more evidence is available to suggest otherwise, HIV-infected women with ASC-US or other cytological abnormalities should be referred for colposcopy.

Just as little is known about the proper cervical cancer screening strategies for HIV-infected women, the same is true for the management of mild dysplasia, or CIN 1, in these women. In immunocompetent women, CIN1 is often observed and not treated, particularly in younger women, since CIN 1 will often regress without treatment. In a published prospective cohort study by Massad et al., the authors show that CIN 1 infrequently progresses to more severe disease, including cancer, in women with HIV infection. They concluded that observation appears safe for these women (with the assumption that they will be followed carefully and not lost to follow-up in the system). In adult women, regardless of immune function, CIN 2/3 or worse disease should always be treated.

***Based largely on these data discussed above and the 2001 American Society for Colposcopy & Cervical Cytology (ASCCP) Consensus Guidelines, Dr. Weaver provides in this issue a suggested algorithm for HIV-infected women with cytological abnormalities.*

References

Goldie SJ et al. Cost effectiveness of HPV testing to augment cervical cancer screening in women infected with the HIV. Am J Med 2001;111:140-9.

Harris TG et al. Incidence of cervical squamous intraepithelial lesions associated with HIV serostatus, CD4 cell counts, and HPV test results. JAMA 2005 (23/30 March);293(12):1471-6.

Holcomb K et al. The significance of ASCUS cytology in HIV-positive women. Gynecol Oncol 1999;75:118.

Massad LS et al. HPV testing for triage of HIV-infected women with Papanicolau smears read as atypical squamous cells of uncertain significance. J of Women's Hlth 2004 (2 November);13:147-53.

Massad LS et al. Natural history of grade 1 cervical intraepithelial neoplasia in women with HIV. Obstet Gynecol 2004 (November);104(5):1077-85.

Massad LS et al. Prevalence and predictors of squamous cell abnormalities in Papanicolaou smears from women infected with HIV-1. J Acquir Immune Defic Syndr 1999;21:33.

Solomon et al. The 2001 Bethesda System: terminology for reporting results of cervical cytology. JAMA 2002;287:2114-9.

USPHS/IDSA Prevention of opportunistic infections working group. USPHS/IDSA guidelines for the prevention of opportunistic infections in persons infected with HIV: disease-specific recommendations. Clin Infect Dis 1995;21(suppl 1):532-43.

Watts DH, et al. Effects of bacterial vaginosis and other genital infections on the natural history of HPV infection in HIV-1-infected and high-risk HIV-1-uninfected women. J Inf Dis 2005 (1 April);191:1129-39.

Wright TC Jr et al. Interim guidance for the use of HPV DNA testing as an adjunct to cervical cytology for screening. Obstet Gynecol 2004 (Feb);103(2):304-9.

Wright TC Jr et al. 2001 Consensus guidelines for the management of women with cervical cytological abnormalities. JAMA 2002 (24 April);287(16):2120-9.

Wright TC et al. Significance of mild cytologic atypia in women infected with HIV. Obstet Gynecol 1996;87:515.

For American Society for Colposcopy & Cervical Pathology 2001 Consensus Guidelines, visit www.asccp.org/consensus.shtml

For Department of Health & Human Services 2004 HIV Treatment Guidelines, visit www.cdc.gov/hiv/treatment.htm#treatment

Letter from the Editor

Dear Colleagues,

According to UNAIDS, more than 40 million people are living with HIV today. Of these, 50% are women. There is no question that the HIV epidemic is increasingly affecting women in the world. This increased prevalence of HIV is seen in the U.S., especially among African-American and Hispanic women. According to CDC and Prevention, in 2002, 28% of HIV cases diagnosed in the U.S. were among women; 41% of HIV cases were among women aged 13-24 years. AIDS is among the leading causes of death for young African-American women.

One of our longstanding traditions at IDCR is to honor women during the month of May by writing about the impact of HIV on incarcerated women. Only one in seven inmates in the U.S. is female, but the healthcare of these women is more complicated, and more costly, than the care of incarcerated men. This is because they have higher rates of STIs, HIV and HCV. These incarcerated women are also burdened with higher rates of mental illness than male detainees due to intensive, long-term exposures to sexual, physical and psychological violence.[1] Because these women have more health problems, it is critically important to provide them healthcare. Reaching out to these women while they are incarcerated, identifying and treating their HIV and HCV infections and addressing their mental health needs, has an impact that reaches far beyond prison walls.

More often than not, on the outside, these women are mothers, sisters, partners and caretakers. Therefore, incarceration provides us an opportunity to inform women about HIV and HCV, to give them the tools and treatment necessary to reduce their risk and better protect themselves from infection if they are not already infected. If they are already infected, we can help them prevent transmission of these infections to their partners and unborn children.

The authors of the articles included in this issue of IDCR have been involved in the care of HIV-infected women, inside and outside of prison, for the entire course of the HIV epidemic. They have found that the care of these women can be as rewarding for the practitioner as it is for the patient. Even though HIV or HCV infections have had a terrible impact on the lives of these women offenders, those who have cared for them on the inside have witnessed their enormous resilience, a willingness to carry on and to improve their own health despite the many obstacles that they encounter. One of the main factors that motivates them is the hope of regaining contact with and custody of their children. It is our belief that caring for these women means that we are caring for the communities - the families, the children, to whom they return, after release.

Lastly, we would like to take this opportunity to thank our colleagues in the field for their dedication to caring for HIV-infected women inside prison, and out.

Respectfully,

Beth Weaver, DO

1. Browne, A, et al. Prevalence and severity of lifetime physical and sexual victimization among incarcerated women. Int J Law Psychiatry. 1999 : 22(3-4) :301-22.

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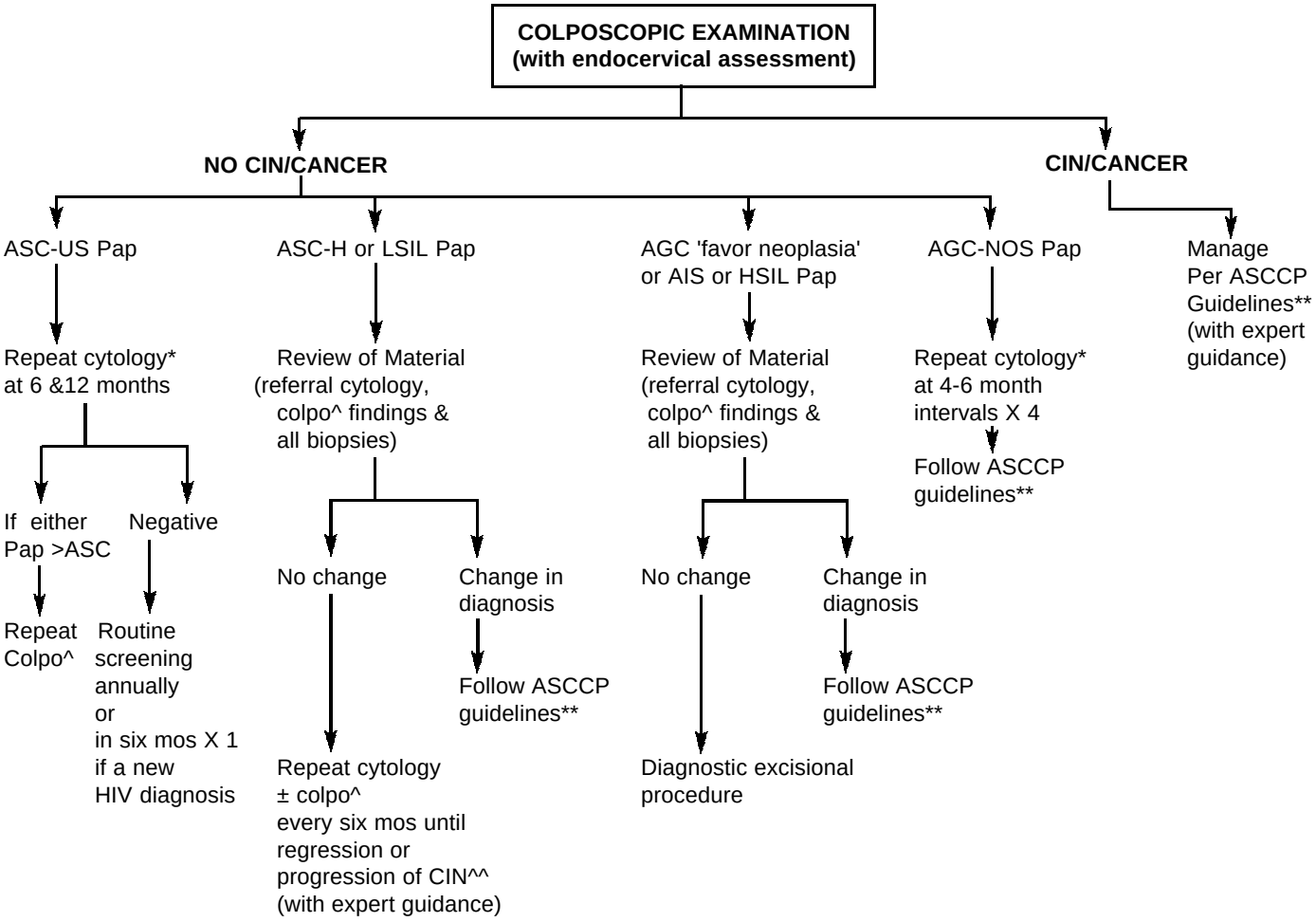
IDCR-O-GRAM: Suggested Management of HIV-Infected Women with ANY Cytological Abnormality (ASC-US, ASC-H, AGC, LSIL, HSIL)

Little is known about the best management of abnormal cervical cytology among HIV-infected women. This flow chart is a suggested algorithm created by an expert in the field and is based on the American Society for Colposcopy and Cervical pathology (ASCCP) guidelines (www.asccp.org/consensus.shtml) and the most current available research on this topic. All HIV-infected women with any Pap abnormality should be referred for colposcopy. This algorithm assumes that the Pap report states "satisfactory for evaluation." If the Pap is "unsatisfactory for evaluation," it should be repeated. No HPV testing triage is recommended in HIV-infected women at this time, based on insufficient evidence to support clinical or cost-effective utility.



=If unsatisfactory colposcopic examination, refer to expert
^^May depend on status of immune function (i.e. CD4 cell count and HIV viral load burden)
^Colpo = colposcopy
** Conventional or liquid-based*
*** Visit: www.asccp.org/consensus.shtml*

Abbreviations Defined:
ASC-US = atypical squamous cells of undetermined significance (mild atypia)
ASC-H = atypical squamous cells: cannot exclude high-grade squamous intraepithelial lesion
HSIL = high-grade squamous intraepithelial lesion
AGC = atypical glandular cells
AGC-NOS = atypical glandular cells, not otherwise specified (also known as 'atypical glandular cells of undetermined significance')
CIN = cervical intraepithelial neoplasia
AIS = adenocarciinoma in situ
LSIL = Low-grade squamous intraepithelial lesions

Save the Dates

Centerforce Inside-Out Summit
September 10-13, 2005
San Francisco, CA
Visit: www.centerforce.org/summit

ICAAC Meeting
September 21-24, 2005
New Orleans, LA
Visit: www.icaac.org

United States Conference on AIDS
September 28-October 2, 2005
Houston, TX
Visit: www.nmac.org

IDSA Conference
October 6-9, 2005
San Francisco, CA
Visit: www.idsociety.org

National Conference on Correctional Health Care
October 8-12, 2005
Denver, CO
Visit: www.ncchc.org

Society of Correctional Physicians Annual Meeting
October 9, 2005
Denver, CO
Visit: www.corrdocs.org

Management of HIV/AIDS in the Correctional Setting: A Live Satellite Videoconference Series
"Drug-drug Interactions and Metabolic Complications of HIV"
October 26, 2005
Visit: www.amc.edu/patient/hiv/hivconf/index.htm

APHA Meeting and Exposition
November 5-9, 2005
New Orleans, LA
Visit: www.apha.org

In The News

Errata: Vol. Vol. 8, Issue 4
In the IDCR, "Managing STIs in Jails," two errors occurred. On page two, column one, in section three, the unpublished data from a study on male inmates in the NYC jail system should read, "Unpublished data from a recent study on male inmates in the NYC jail system revealed a relatively high rate of asymptomatic chlamydial infection, especially in males 35 years and *younger*." The subsequent sentence should read, "This finding led to the current universal screening for chlamydia and gonorrhea in all males *younger* than 35 years in the NYC jail system."

25% of Women in WIHS Stop HAART
A recent analysis of the Women's Interagency HIV Study (WIHS) has demonstrated that 25% of women stop highly active antiretroviral therapy (HAART) for at least six months during study follow-up of five years. The risk of discontinuation was over one and a half times greater after 1998 as compared to the two and a half years preceding 1998. Discontinuers were more likely to be African-American or Latina and less likely to be white. Additionally, discontinuers were more likely to have had AIDS, lower median increase in CD4 cell count, higher viral loads, and were more likely to be depressed. Adieh-Grant, et al. suggest that access to treatment for depression may be helpful and that poor adherence is associated with depressive symptoms.
Ahdieh-Grant, et al. JAIDS. 2005; 38(4):500-03.

CD4 Count Predicts Cervical SILs
Current cervical cancer screening guidelines state that the interval between screenings can be safely extended to three years in healthy HIV-uninfected women 30 years and older who have normal cytology results and negative test results for HPV DNA. Harris, et al. analyzed data from the Women's Interagency HIV Study (WIHS), an observational cohort study, to determine the incidence of squamous intraepithelial lesions (SILs) in HIV-infected women with normal cytology results, by baseline oncogenic human papillomavirus (HPV) DNA results. The incidence of SILs were estimated according to baseline HPV DNA, stratified by HIV serostatus and CD4 cell count. Development of SILs in women with negative HPV results at two years was as follows: in HIV-infected women with CD4 cell counts less than 200/ul, 9%; with CD4 cell counts between 200ul and 500ul, 9%; and with CD4 cell counts greater than 500/ul, 4%. At two years, Multivariate Cox models showed that there was not a significant difference in the incidence of any SILs between HIV-infected and HIV-uninfected women who had CD4 cell counts greater than 500/ul. Harris et al. concluded that the similar low cumulative incidence of any SIL among HIV-infected and HIV-uninfected women with CD4 counts greater than 500/ul and who had normal cervical cytology and negative results for oncogenic or all HPV DNA tests at baseline suggests that similar cervical screening may be applicable to both groups, although the authors note that this strategy warrants further study in an appropriately designed trial.
Harris, et al. JAMA. 2005; 293(12):1471.

Breast/Uterine Cancer Reduced in Women with AIDS
James Goedert, MD told participants at the 96th annual meeting of the American Association for Cancer Research that women with AIDS have a lower risk of developing cancer of the breast and uterine corpus, perhaps because of alterations in body fat and hormone imbalance. Of 77,739 women with AIDS who were followed from five years, prior to, and 10 years after, AIDS diagnosis, 274, 31, and 29, developed breast cancer, ovarian cancer, and cancer of the uterine corpus, respectively. The incidence of breast cancer was 32% less in women with AIDS compared to women without AIDS.
96th annual meeting of the American Association for Cancer Research. April 2005: Anaheim, CA. www.natap.org

NCCHC Update: "Love Me Tender" Program
Approximately 3% of the total female population incarcerated in the Texas Department of Criminal Justice (TDCJ) are pregnant upon entry and 61% are of child-bearing age. Many of these women are pregnant for the first time and have little or no prenatal care prior to incarceration. To address these factors, TDCJ developed the "Love Me Tender" program. Pregnant women are housed together and are transported to the labor and delivery unit at the University of Texas Medical Branch (UTMB) to have their babies. They are subsequently housed in a unit in the TDCJ hospital and UTMB nursery staff cares for the babies until discharge. Newborns are brought to see their mothers Monday through Friday for two hours to encourage bonding. Previously, incarcerated women who delivered their babies at UTMB were only allowed a one-time visit with their newborn during hospitalization. Outcomes of this program have demonstrated improved self-esteem, improved behavioral relationships, and a commitment to avoid re-incarceration.
National Commission on Correctional Healthcare: "Love Me Tender" Program session.

Resources

Women, Children, and HIV: Resources for Prevention and Treatment
www.womenchildrenhiv.org

The Well Project
www.thewellproject.com

Maternal-Child HIV Transmission, Perinatal Guidelines
http://aidsinfo.nih.gov/guidelines/default_db2.asp?id=66

Animation: Mechanisms of Insulin Resistance in HIV-Infected Patients
http://clinicaloptions.com/hiv/manage/metabolics/#metabolics_glucose

American Society for Colposcopy and Cervical Pathology (ASCCP) Consensus Guidelines
www.asccp.org/consensus.shtml

Self-Assessment Test for Continuing Medical Education Credit

Brown Medical School designates this educational activity for one hour in category one credit toward the AMA Physician's Recognition Award. To be eligible for CME credit, answer the questions below by circling the letter next to the correct answer to each of the questions. A minimum of 70% of the questions must be answered correctly. This activity is eligible for CME credit through November 30, 2005. The estimated time for completion of this activity is one hour and there is no fee for participation.

1. Which of the following is not true?
   a. The prevalence of mental illness in incarcerated women is much higher than the prevalence of mental illness among women who are not incarcerated.
   b. Male-to-female HIV transmission is more efficient than female-to-male HIV transmission.
   c. High prevalence rates of gonorrhea, chlamydia, and syphilis exist among HIV-infected incarcerated women.
   d. Persons who are co-infected with HIV and an STI may have decreased HIV shedding in genital secretions.
   e. None of the above.

2. HIV prevalence among women in U.S. federal and state prisons is approximately two times greater than HIV prevalence among men in similar facilities. True or False?
   a. True
   b. False

3. The percentage of women who do not see their children at all while incarcerated is closest to which of the following?
   a. 25%
   b. 50%
   c. 75%
   d. 100%

4. HIV education and testing should be offered on multiple occasions to women who:
   a. Are pregnant
   b. Have a history of drug use
   c. Have a history of sex work
   d. Have HBC or HCV
   e. All of the above

5. According to the ASCCP guidelines, all HIV-infected women with any cytologic abnormality should be referred for colposcopy. True or False?
   a. True
   b. False

IDCR Evaluation

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