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# HEPP NEWS

January 2002 Vol. 5, Issue 1

HIV & HEPATITIS  
EDUCATION  
PRISON  
PROJECT

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## ABOUT HEPP

*HEPP News, a forum for correctional problem solving, targets correctional administrators and HIV/AIDS and hepatitis care providers including physicians, nurses, outreach workers, and case managers. Continuing Medical Education credits are provided by the Brown University Office of Continuing Medical Education to physicians who accurately respond to the questions on the last page of the newsletter.*

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Brown Medical School*

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**Joseph Bick, M.D.**

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**David P. Paar, M.D.**

*Director, AIDS Care and Clinical  
Research Program,  
University of Texas, Medical Branch*

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## HUMAN PAPILLOMAVIRUS INFECTIONS IN INCARCERATED WOMEN

**Annekathryn Goodman, M.D.\*** *Associate Professor in Obstetrics, Gynecology, and Reproductive Biology, Harvard Medical School, Division of Gynecologic Oncology, Massachusetts General Hospital*

The factors associated with the development of lower genital tract neoplasia (cancers) are directly related to lifestyle, poverty, sexual risk taking behaviors, and access to health care. Historically it has been observed that women who have multiple sexual partners or have a partner who has had multiple sexual partners are at highest risk for the development of cervical cancer. Human papillomavirus (HPV) is the most important etiological agent in neoplastic change. In the past two decades, HIV and HPV co-infection has been associated with more rapid development of cervical cancer. Most incarcerated women are at very high risk for cervical cancer due to their lifestyles and to the high rate of HIV co-infection in this population. This paper reviews the present knowledge of this viral infection and the management of HPV infection in incarcerated populations.

### EPIDEMIOLOGY

Human papillomavirus (HPV) is a sexually transmitted disease. The role of HPV in malignant transformation has become fairly well-established. HPV DNA has been found in over 95% of cervical condyloma acuminata, all premalignant cervical lesions, and invasive cancers. Due to poor access to preventive health care in developing countries of the world and in selected populations in the developed world, cervical cancer remains the leading cause of cancer death world-wide.

An accurate evaluation of the prevalence of human papillomavirus infections is difficult because the infection is not reportable, most infections are subclinical, sensitivity of detection varies with the method used, and regression of infection occurs. However, HPV is thought to be the most common viral sexually transmitted disease. It is estimated that 20 to 40 million persons in the United States are infected with HPV. HPV is very common, as can be demonstrated by studies of mass screening using hybridization techniques on cells collected from cervical smears. Ten to 30 percent of specimens had evidence of HPV infection. The Centers for Disease Control and Prevention (CDC) have observed an increase in the prevalence of HPV

infection obtained through surveys of office visits for HPV from 1966 to 1988: a five fold increase occurred during that period. In some populations, cross sectional studies of cytologically normal women suggest that 20 to 40 percent of sexually active women have detectable HPV infection. That prevalence decreases with age.

HPV is classified by subtype. Some subtypes are more or less likely to be associated with cervical cancer. Genital subtypes can vary by geography and ethnicity. In the United States, HPV 16 has been found to be the most prevalent subtype. HPV 16 is also the predominant subtype in countries around the world except for Indonesia, where HPV 18 is more common. There is significant geographic variation in the prevalence of some of the less common viral subtypes. A clustering of HPV 45 has been apparent in Western Africa, while HPV 39 and HPV 59 have been almost entirely confined to Central and South America.

Most HPV infections occur in young adults with a peak in the late teens and early twenties. Currently HPV infections have reached epidemic proportions in young, sexually active populations. Of note, the mean age for women who develop cervical dysplasia is 25 years old, while carcinoma-in-situ and invasive cervical cancer has an older mean age of 30 and 50 years respectively. The decreasing prevalence of human papillomaviral infections with age is thought to be related to increasing development of both cell mediated immunity and mucosal IgA immunity.

Human papillomavirus infection is predominantly transmitted by micro trauma to the genital

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**HUMAN PAPILLOMAVIRUS...**  
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mucosa that occurs as part of normal sexual behavior. Viral particles are introduced in this way in the basement membrane of the skin. Over two-thirds of partners of persons infected with HPV developed condylomata on average two to three months after exposure. Transmission occurs from male to female, female to male, male to male, and female to female. PCR studies suggest all coital contacts are infected with one exposure. The incubation period is long, and can be difficult to accurately assess because of subclinical infections and the effect of host immunity. It is estimated to be anywhere from three weeks to 20 months. While condoms are thought to be slightly protective for cervical infections by HPV, they are not protective against transmission from contact between external genital skin. Human papilloma virus can also be transmitted vertically during childbirth. Juvenile laryngeal papillomatosis is a rare sequellum of vaginal delivery. Other potential modes of transmission have not been well-documented. These include fomites and close, non-sexual contact such as with children. Co-factors for transmission, persistence, and neoplastic change in HPV infections include tobacco use, oral contraceptives, and possibly concurrent sexually transmitted diseases such as herpes simplex, chlamydia trachomatis, cytomegalovirus, and Epstein-Barr virus.

**PATHOGENEIS AND NATURAL HISTORY**

While 30 to 50% of sexually active people are infected with human papillomavirus, progression to cancer occurs in less than one percent of women. There are three possible scenarios for a HPV infection. There can be complete clearance of HPV after the acute infection. Alternatively, the infection can stay or become latent. And finally, there can be active progression of the infection. Observations supporting the transient nature of some infections include the increase of host immunity with age, and the anatomical changes in the normal maturation of the cervix. In the teenage and young adult group, the glandular endocervical lining is present on the exocervix (called cervical ectropion). As the cervix matures over a woman's reproductive life, the cervical ectropion is replaced through a process of squamous metaplasia to stratified squamous epithelium. The stratified squamous epithelium is thought to be more protective in general against sexually transmitted diseases. Hormonal environment may also play a role in the patient's susceptibility to HPV. Mucosal immunity occurs through the common mucosal immune system with production of IgA over

**TABLE 1 : HPV Subtypes and Associations with Mucosal Neoplasia**

<p><b>LOW RISK</b></p> <ul style="list-style-type: none"> <li>■ 6, 11 - cause papillomas of the upper airways and external genital condyloma</li> <li>■ 42, 43, 44 - closely related in their nucleotide sequence to 6, 11</li> </ul>
<p><b>INTERMEDIATE RISK</b></p> <ul style="list-style-type: none"> <li>■ 31, 33, 35, 51, 52 - associated with dysplasia</li> </ul>
<p><b>HIGH RISK</b></p> <ul style="list-style-type: none"> <li>■ 16 - present in 50% of high grade squamous intraepithelial lesions of the cervix, and invasive cancer present in 15% to 40% of low grade lesions in the cervix, present in 85% of high grade lesions in other areas of the anogenital tract, present in 40% of subclinical lesions of the vulva and 10% of recalcitrant condyloma acuminata</li> <li>■ 18 - very rarely found in low grade lesions. Involved in a faster transit time to invasive cancer in squamous and glandular lesions, closely linked to glandular dysplasia and adenocarcinoma of the cervix</li> </ul>

time. This is a slow delayed response that does not immediately occur with initial exposure to HPV. Risk factors for persistent HPV infection and neoplastic change include aneuploid dysplastic lesions, oncogenic HPV subtypes, immunosuppression, and certain HLA alleles.

**CLINICAL MANIFESTATIONS OF HPV INFECTION**

**BENIGN LESIONS**

A vulvar condyloma can show a wide range of appearances. Small raised crusted lesions can appear on the vulvar or perianal region. Bigger condyloma can appear confluent, rising above the skin level. In immunocomprised patients, the condyloma can extend up onto the mons and back to the buttocks. Small papular changes on the skin can sometimes be attributed to HPV infection. These visual changes can either be completely asymptomatic or can be associated with vulvar pruritis and burning. Exophytic condyloma can also occur in a multifocal pattern in the vagina. Condyloma can also occur on the cervix. The majority of cervical condyloma are flat although raised leukoplakic lesions can be seen.

**PREMALIGNANT LESIONS**

Intraepithelial neoplasia of the lower genital tract can be categorized by site. Vulvar intraepithelial neoplasm (VIN) appears as a discrete pigment change on the vulvar skin. This pigment change can be white, gray, black or red. Most commonly it is gray to black. The lesion may or may not be raised but always has a sharp border to it. VIN is commonly multifocal and frequently involves the perianal region as well. These lesions can be completely asymptomatic or can be associated with burning or itching.

Vaginal intraepithelial neoplasia (VAIN) is an asymptomatic mucosal change that can occur anywhere in the vagina. It is seen by

colposcopic viewing as discrete, sharp bordered regions of white epithelium that may or may not be associated with atypical vascular changes. Cervical intraepithelial neoplasia (CIN) is also asymptomatic. This can appear as unifocal or multifocal white, discrete lesions seen by colposcopy. These lesions can be associated with atypical blood vessels such as a mosaic (cobblestone) or punctate vascular pattern. All intraepithelial neoplasia can be divided into low grade or high grade lesions. Low grade lesions are usually histopathologically associated with cytopathic changes of HPV. High grade lesions include moderate to severely dysplastic changes.

**MALIGNANT LESIONS**

Invasive cancers of the lower genital tract, which include anal, vulvar, vaginal, and cervical cancers, have all been associated with human papillomavirus infections. Perianal cancers are highly associated with immunosuppression such as that observed in progressive HIV infection. Invasive vulvar cancers have a bimodal age distribution. In the younger age group, mean age 40 years, vulvar cancer is highly associated with HPV infection. These lesions are usually multifocal and can be associated with immunosuppression from HIV. The second age group (mean of 70 years), have unifocal vulvar cancers that are not HPV related. Vulvar and perianal cancers can appear as a raised or ulcerated lesion on the surface of the skin. Very small cancers may be asymptomatic. However with time, these cancers become painful and can bleed.

Vaginal cancers comprise one percent of all female genital malignancies. They are associated with HPV infection. The most common site of vaginal cancer is the posterior upper third of the vagina. Frequently these cancers are missed when they are small as they can be hidden by the specu-

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## LETTER FROM THE EDITOR

Dear Colleagues,

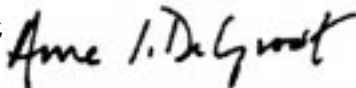
Having just returned from a trip to visit the University of Mali Medical School, hospital (Point G) and research center (the NIH-funded MRTC) in Bamako, Mali (West Africa), I'm looking at the enormous contrast between HIV practice here, and there, from a new perspective. As there is still only limited access to antiretroviral agents, and the cost of the medication is still prohibitive despite a dramatic pricing reduction, patients are reluctant to get tested for HIV (why test, if treatment is inaccessible). Therefore, most patients only present to clinicians in the very late stages of AIDS - literally on death's door. The real tragedy is yet to come, when the effect of AIDS on the economic stability of subsaharan Africa becomes more apparent. The average age of the AIDS ward patients when I visited was 23.

I saw cases of severe cryptococcal meningitis, wasting disease, and miliary tuberculosis, the likes of which I have not seen in years in my practice here in the US. Screening for and treatment of CMV is unheard of. Mycobacterial subtyping (MAI vs M.tb vs M.bovis) is not possible. Prophylaxis for opportunistic infections is not feasible, due to the cost of the medications. And, to put the conditions for patients in sharp contrast with the treatment for HPV that is outlined in this issue of HEPP by my colleague A.K. Goodman, Pap testing is not the standard of care at all. Thus, cervical cancer is one of the top cancer causes of death in Africa.

I am pleased to report that antiretroviral medication ("ARV" to Malian doctors) is becoming more accessible due to the advocacy of clinicians and governments in Africa, and Malian physicians are eager participants in any AIDS training courses that are available. I hope we may help our colleagues avoid some of the costly errors we have made in the course of the US epidemic. How would we structure HIV/AIDS care now, if we had a chance to start over now that so many different treatment options are available?

Our tradition to address sexually transmitted diseases in our January issue of HEPP is done by AK Goodman, a gyn-onc specialist who provided care contemporaneously with me in a MA DOC institutions in the late 1980s. In this issue, Dr. Goodman provides a roadmap for the diagnosis and treatment of HPV. After reading this article, readers should understand the transmission of HPV, the relative risk of the various subtypes, and the current gynecological standard of care for HIV-positive women. In keeping with the STD theme, we also bring you a spotlight on the issue of condom distribution in prison and jail settings from across the border (Canada). And, since the use of combination therapy is expanding, we decided to re-run our "Abacavir Hypersensitivity Syndrome (AHS)" algorithm, which clinicians can use in order to recognize the symptoms of AHS and to identify the antiretroviral medications that contain abacavir.

Sincerely,



Anne S. De Groot, M.D.

Published monthly and distributed by fax, HEPP News provides up-to-the-moment information on HIV and hepatitis treatment, efficient approaches to administering treatment in the correctional environment, national and international news related to HIV and hepatitis in prisons and jails, and changes in correctional care that impact HIV and hepatitis treatment.

### Senior Advisors

Theodore M. Hammett, Ph.D.  
Abt Associates

Ned E. Heltzer, R.Ph., M.S.  
Heltzer Associates

Ralf Jürgens  
Canadian AIDS Law Legal Network

Joseph Paris, Ph.D., M.D.  
CCHP Georgia Dept. of Corrections

David Thomas, J.D., M.D.  
Florida Dept. of Corrections

Lester Wright, M.D.  
New York State Dept. of Corrections

### Associate Editors

Dean Rieger, M.D.  
Indiana Dept. of Corrections

Josiah Rich, M.D.  
Brown University School of Medicine,  
The Miriam Hospital

Stephen Tabet, M.D., M.P.H.  
Univ. of Washington Division of Infectious  
Disease Seattle HIVNET

David A. Wohl, M.D.  
University of North Carolina

### Managers

Craig Grein  
Brown University

Michelle Gaseau  
The Corrections Connection

### Layout

Kimberly Backlund-Lewis  
The Corrections Connection

### Distribution

Screened Images Multimedia

### Managing Editor

Rebecca Nerenberg  
HIV/Hepatitis Education Prison Project

The editorial board and contributors to HEPP News include national and regional correctional professionals, selected on the basis of their experience with HIV and hepatitis care in the correctional setting.

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**HUMAN PAPILLOMAVIRUS...***(continued from page 2)*

lum blades. Early cancers are asymptomatic. As the cancer grows, the major symptoms become bleeding and pain. On physical examination, these cancers will appear as discrete, raised, or ulcerated lesions that are hard on palpation.

Cervical cancer is highly associated with HPV infection. Asymptomatic cancers are picked up by Pap smear screening. On inspection, a cervical cancer can appear exophytic with a polypoid, raised growth on the exocervix, or endophytic, with expansion of the cancer in the endocervical canal. Early symptoms include post-coital spotting, abnormal vaginal bleeding, and an abnormal discharge. Late symptoms that herald metastatic spread include bladder outlet obstruction, constipation, back pain, and leg swelling.

**DIAGNOSIS**

Diagnosis of HPV infection and its clinical manifestations can be made by clinical examination, HPV DNA detection methods, cytology, and/or colposcopy with biopsy. Most basic and clinical investigations use one or more of three nucleic acid-based tests to detect and type HPV. These tests include hybrid capture system (HCS), in situ hybridization (ISH), and polymerase chain reaction (PCR). Presently hybrid capture II assay is used commercially for clinical HPV testing.

**THE ROLE OF HPV TESTING**

The role of HPV testing has been intensively evaluated. It has been looked at as an adjunct to cervical cancer screening and as a triage tool for low grade and atypical Pap smears for colposcopic referrals. Three recent studies have evaluated the utility of HPV testing. A longitudinal cohort of 2011 women aged 15-19 was recruited by Woodman et al. Testing and cytology was

performed every six months for three years. The cumulative risk of any HPV infection was 44% however most infections were of short duration. Twenty-eight of the 2011 developed high grade dysplasia. They concluded that the inevitability of acquiring an HPV infection and the transient nature of the infection made HPV testing for cervical cancer risk assessment inadequate.

A second study by Moscicki et al prospectively screened 105 women who were HPV negative at baseline for a median of 50 months. Nineteen percent developed low grade dysplasia and no women developed high grade dysplasia. They concluded that the majority of young women with HPV infection never develop low grade dysplasia.

Solomon et al reported their preliminary finding from the ASCUS/LSIL Triage Study (ALTS) trial. They looked at 3488 women with atypical squamous cells of uncertain significance (ASCUS) who were randomized to immediate colposcopy, HPV triage, or repeat Pap smear. They found that the prevalence of high grade lesions was 5.1%. However, 56.1% of the women with ASCUS were positive for high risk HPV types. While they concluded that HPV testing has a greater sensitivity to detect a high grade lesion compared with repeat Pap smear alone, there was a significantly increased number of women referred to colposcopy.

In conclusion, as most HPV infections are transient and are not associated with neoplastic change, isolated HPV testing does not accurately identify those women destined to develop malignancy. At the present time, HPV DNA testing cannot be recommended for routine clinical use.

**TREATMENT AND MANAGEMENT**

The goal of treatment is to destroy visible lesions for cosmetic reasons, reduction of

symptoms, or treatment of preinvasive and invasive lesions. No treatment modality will eradicate the virus. For benign condyloma and preinvasive disease, local destruction with podophyllin, trichloroacetic acid, laser, or excision can be used. For invasive disease, either a radical surgical excision or radiation therapy is used.

Because HIV infected and immunocompromised patients have an increased incidence of persistence and progression to neoplastic change, they need to be monitored more closely over time. For routine screening, at least yearly Pap smears and visual inspection of the external genitalia should be performed. For a number of reasons, including poor follow-up care after release from prison, the current standard of practice for incarcerated HIV-infected women is to perform Pap smears every six months. Most institutions have colposcopy available on site. Some authors recommend a baseline colposcopy for all HIV infected women with the presence of HPV infection. There appears to be a reduction of accuracy of Pap smears in this group secondary to obscuring inflammation from cervicitis. Colposcopy should be done on all women with abnormal Pap smears including atypia and low grade dysplasia. All dysplasias should be treated aggressively.

**CONCLUSION**

Human papillomavirus is a necessary but not sufficient factor for the development of lower genital tract neoplasia. Most HPV infections are with the high risk oncogenic subtype yet less than one percent of women with this infection will experience a malignant progression. Risk factors for progression to malignancy include immunosuppression and persistent HPV infection. Careful screening with good physical examination and Pap smear testing can detect most of preinvasive and invasive lower genital tract disease.

\*Nothing to disclose.

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**HPV TESTING**

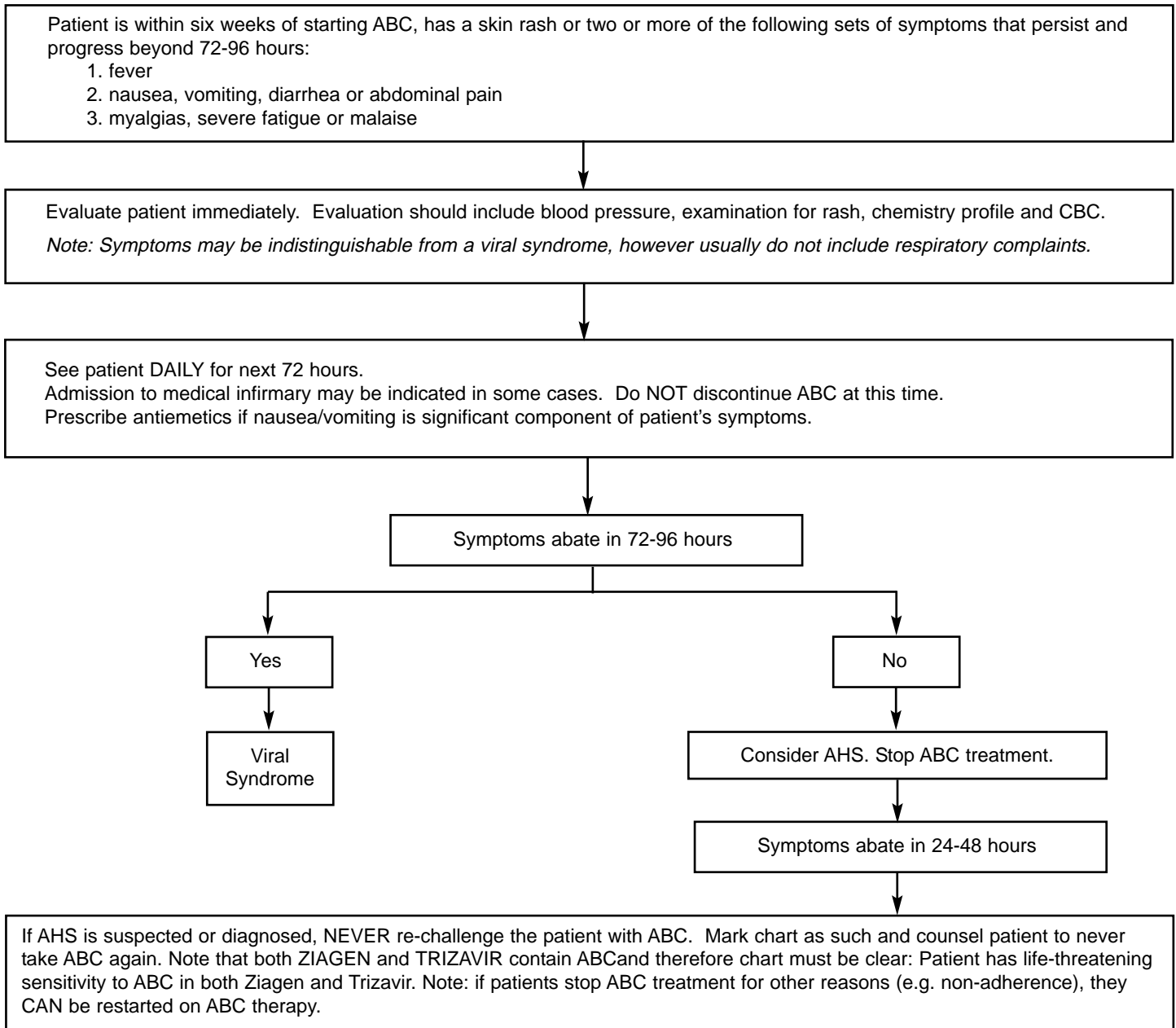
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## HEPPIGRAM: Management of the Abacavir Hypersensitivity Syndrome (AHS)

Approximately 3%-5% of patients who are on Abacavir (ABC) antiretroviral therapy experience what is known as the Abacavir Hypersensitivity Syndrome (AHS) within the first six weeks of therapy. It is important to counsel patients about AHS before they begin treatment and to contact medical staff immediately if symptoms should occur within the first six weeks of treatment. Additionally, they should be counseled NOT to discontinue the medication on their own, as it would confuse later decision making. This algorithm describes the management of AHS.



It is important NOT to stop the ABC when symptoms first appear, without further investigation as described above, as they are indistinguishable from a viral syndrome. Because AHS is not dangerous if detected early, clinicians can have the opportunity to follow the patient and determine if the patient's symptoms disappear. If, on the other hand, the ABC is stopped before confirmation of AHS, it could preclude the use of a truly potent antiretroviral that the patient might need in the future. Unfortunately, once stopped in the event of symptoms, ABC can never be used again.

## SPOTLIGHT: Condoms in Correctional Settings

By Rebecca Nerenberg\*, Managing Editor, HEPP News

Wardens turned their eyes and minds west to Los Angeles last month, after hearing that the Los Angeles County Jail (LACJ) began distributing condoms to its self-declared gay inmates (see Inside News, page 8). The LACJ is only the seventh facility in the nation to distribute condoms. Four jail systems, in New York City, Philadelphia, San Francisco, and Washington, and two prison systems, in Vermont and Mississippi, also make condoms available to their inmates. Most correctional facilities in the US have chosen not to distribute condoms due to three major concerns: 1) that condoms would be used as weapons; 2) that the condoms would be used to hide contraband; 3) and/or that the distribution of condoms would implicitly suggest that sex is permitted.

Condoms have been available in Canadian federal prisons for 10 years (condoms were first made available January 1, 1992).<sup>1</sup> HEPP News recently interviewed Mr. Ralf Jürgens, director of the Canadian HIV/AIDS Legal Network about the Canadian experience with condom distribution over the past decade.

Commonly voiced fears about making condoms available in prisons include the fear that the condoms can and will be used as weapons. One concern, mentioned by several correctional professionals in response to the news about the LACJ is that condoms could be filled with sand or dirt and used to hit other inmates or corrections staff. Other professionals have raised concerns about condoms being used as a strangulation device. When asked if these situations or other situations similar to these have arisen in Canada, Jürgens replied, "No. No events like these have been reported and furthermore, there have been no reported events of condoms being used as any type of weapon."

In fact, Jürgens explained, the "issues [surrounding condom distribution in corrections] have become non-issues." Jürgens cited a survey he worked on as part of the Expert Committee on AIDS and Prisons in Canada in 1995, several years after condoms were made available (at that point condoms were available in a wide variety of ways, not only through healthcare services). In this survey, the researchers found that 82% of correctional staff reported that making condoms available in prisons had not created any problems in the institution.<sup>2</sup> The 18% of staff who did report problems cited issues not related to safety and security. There were comments, for example, that the inmates were "using too many of them [condoms]," Jürgens said, emphasizing that the problems reported were often minor and in no way endangered either the staff or the inmates.

Furthermore, although some staff had been concerned that condoms could be used to hide contraband or that making condoms available would be seen as encouraging sexual activity, most staff found that these fears did not materialize. According to Jürgens, the idea of condoms being used to hide contraband was discussed before condoms were available, but there has been no mention of it since. As Jürgens explained, condoms are not available from outside the prisons, only from within the institution. Therefore, it makes it difficult, if not impossible, to use condoms as containers in which to smuggle contraband into the prison from outside. Furthermore, Jürgens said that objects that constitute contraband have been smuggled from location to location within the prisons long before condoms were made available. In other words, although condoms could serve as

another way to hide and/or transport contraband once it is inside the walls, they have not materialized as "contraband containers."

The third issue surrounding the availability of condoms in corrections is that it implies that sexual activity is permitted, when in fact, it is illegal. Responding to this idea, Jürgens cited that sex while in prison is still an institutional offense in Canada, but that "fighting the spread of HIV is more important than upholding so-called morality when the activity is occurring [even in the absence of condoms]." He made the analogy that while drug use is illegal on the outside as well as on the inside, many countries around the world have needle exchange programs, responding to a public health problem. Jürgens described the availability of condoms in corrections as "a pragmatic public health response to something that happens – it does not condone the activity [in itself]." Thus, in the Canadian experience, the issues most often discussed regarding condoms in corrections have turned out not to be issues.

Although condoms have been available in Canadian federal prisons since 1992, many inmates chose not to access condoms until 1994. Jürgens and others questioned inmates about the distribution process. Initially, condoms were only distributed in prison healthcare services. Inmates responded that they would be much more likely to use the condoms if they did not have to go to a health services provider and ask for them, since doing so meant admitting to participating in an activity that is specifically prohibited in every Canadian correctional facility. Currently bowls or other containers filled with condoms have been placed in areas where inmates can pick them up without being seen by correctional staff or other inmates. Since 1994, condoms, dental dams, and lubricant have been made available in washrooms, shower areas, libraries, and in some cases are freely available "on the ranges." However, some facilities and a few provincial correctional systems have elected not to provide condoms at all or to provide them only through health services. Perhaps the most important observation Jürgens provided on the Canadian experience is that none of the facilities that has ever adopted a policy to make condoms available has reversed the policy.<sup>1</sup>

Jürgens also provided data from studies in Europe which have revealed that the percentage of prison systems providing condoms rose from 53% in 1989 to 81% in 1997.<sup>1</sup> There are only four prison systems in Europe that are not making condoms available to inmates- the rest are now doing so. "The United States is one of the few industrialized countries that do not make condoms available [to inmates]," Jürgens said. The situation in corrections in the United States does not exactly mirror that in Canada or in any other correctional system worldwide, as each nation's system is unique. Given the higher proportion of inmates incarcerated for drug-related crimes in the United States, consideration surrounding condom distribution may differ than those in Canada. Furthermore, considerations for condom distribution in prisons may differ from those for jails. Nonetheless, arguments used in the United States to bar the distribution of condoms in correctional facilities are "not sustainable," according to Jürgens, given the widespread adoption of condom distribution in other developed nations of the world and the relatively few problems as a result.

*\*Nothing to disclose.*

### REFERENCES:

1. *The Canadian HIV/AIDS Legal Network. Prevention: Condoms.* <http://www.aidslaw.ca/Maincontent/issues/prisons/e-info-pa4.htm>
2. *HIV/AIDS in Prisons: Background Materials, Appendix 5. Published by the Correctional Service of Canada. For copies in English or French, call: 613.995.5058.*

# HIV IOI Antiretroviral Agents Dosing and Administration Recommendations: PIs

Adapted from Bartlett JG and Gallant JE. 2001-2002 Medical Management of HIV Infection. Johns Hopkins University, Baltimore, MD. 2001.

This table is a replacement for the table that was printed with a copy error on page 8 of the November 2001 issue of HEPP News. The entire Antiretroviral Agents Dosing and Administration Recommendations table is available in its correct form at <http://www.hivcorrections.org/archives/nov01/nov2001.pdf> (pages 7-8) or by emailing a request to [heppnews@brown.edu](mailto:heppnews@brown.edu).

## PROTEASE INHIBITORS (PIs)

	<b>Indinavir**</b> (Crixivan)	<b>Ritonavir</b> (Norvir)	<b>Saquinavir**</b> (Invirase) (Fortovase)		<b>Amprenavir</b> (Agenerase)	<b>Nelfinavir</b> (Viracept)	<b>Lopinavir + Ritonavir</b> (Kaletra)
<b>Recommended Dose</b>	800mg q 8h Separated ddl dose by 1 hr	600mg bid Separate ddl dose by 2 hr	Not recommend- ed as single PI 400mg bid with RTV	1200mg tid	1200mg bid (caps) 1400mg bid (oral solution)	1250mg bid or 750mg tid	3 caps or 0.5mL twice daily 4 caps bid when used with efavirenz or nevirapine
<b>Food Effect</b>	↓77%; take 1 hr before or 2 hours after meals; may take with low fat snack or skim milk	↑15%; take with food if possible to improve toler- ability	No food effect when taken with RTV	↑6x; take with large meal unless taken with RTV	high fat meal decreases AUC 20%; can be taken with or without food, but high fat meal should be avoided.	↑2-3x; take with meal or snack	Fat increases AUC 50% to 80%; should be taken with food
<b>Side Effects*</b>	GI intolerance (10-15%); nephrolithiasis or nephrotoxicity (10-15%); headache; asthenia; dizziness; rash; metallic taste; ITP; alopecia; lab: increase indirect bilirubinemia (inconsequential) Class side effects*	GI intolerance (20-40%); pares- thesias-circum- oral and extremi- ties (10%); taste perversion (10%); lab:triglycerides increase in 60% and transami- nase increase in 10-15%, CPK and uric acid increase Class side effects*	GI intolerance (10-20%); increase Class side effects*	GI intolerance (20-30%); headache; hypoglycemia; transaminase increase Class side effects*	GI intolerance (10-30%); rash (20-25% - usually at 1-10 wks), Stevens-Johnson syndrome (1%); paresthesias (10-30% - perioral or peripheral) Increase in liver function tests. Class side effects*	Diarrhea (10-30%) Class side effects*	GI intolerance: nausea, vomit- ing, diarrhea Elevated Lipids Asthenia Class side effects*

\*For full information on toxicity and drug interactions for PIs and class side effects, see Chapter 4 of Bartlett JG and Gallant JE. 2001-2002 Medical Management of HIV Infection. Johns Hopkins University, Baltimore, MD. 2001.

## RESOURCES & WEBSITES

### CDC STD Prevention Website

<http://www.cdc.gov/nchstp/dstd/dstdp.html>

### National Institutes of Allergy and Infectious Diseases (NIAID) STD Information Page

<http://www.niaid.nih.gov/daids/prevention/stds.htm>

### STD Fact Sheet

<http://www.niaid.nih.gov/factsheets/stdinfo.htm>

### MEDLINE Sexually Transmitted Diseases Website

<http://www.nlm.nih.gov/medlineplus/sexuallytransmitteddiseases.html>

### Sexually Transmitted Diseases Information Center (JAMA)

<http://www.ama-assn.org/special/std/std.htm>

**Powerpoint presentations from the HEPP NCCHC preconference symposium** available in electronic form. Topics include: the correctional side of HCV, HBV, TB, HIV in women, Mental Health in HIV-positive patients, and information on treating Transgendered patients. Email [HEPPNews@brown.edu](mailto:HEPPNews@brown.edu)

### HIV TREATMENT RESOURCES

#### HIV/AIDS Annual Update 2001

A collection of 11 clinical reviews now available on medscape.  
<http://hiv.medscape.com/update2001>

#### AMFAR HIV/AIDS Treatment Directory, Summer 2001 Edition

For free copies, contact Barbara Good at [barbara.good@amfar.org](mailto:barbara.good@amfar.org) or fax a request to 212.806.1601

#### Updated Adult and Adolescent HIV Treatment Guidelines

[http://www.hivatis.org/guidelines/adult/Aug13\\_01/pdf/AAAUG13S.PDF](http://www.hivatis.org/guidelines/adult/Aug13_01/pdf/AAAUG13S.PDF)



## SAVE THE DATES

### 9th Conference on Retroviruses and Opportunistic Infections

February 24-28, 2002  
Seattle, Washington

Registration: Dec. 10, 2001-  
Jan. 23, 2002

Call: 703.535.6899

Visit: [www.retroconference.org](http://www.retroconference.org)

### 2002 National STD Prevention Conference

March 4-7, 2002

San Diego, California

Fee: before Feb. 8: \$140;  
after Feb. 8: \$165

Visit: <http://www.stdconference.org/>

Call: G. Vaughn, 404.639.8260

Email: [ghv1@cdc.gov](mailto:ghv1@cdc.gov)

### Management of HIV/AIDS in the Correctional Setting: A Live Satellite Videoconference Series "Dermatological Manifestations of HIV Infection"

March 12, 2002

12:30-3:30 p.m. EST

Call: 518.262.4674

Email: [ybarraj@mail.amc.edu](mailto:ybarraj@mail.amc.edu)

Visit: [www.amc.edu/patient/HIV/hivconf.htm](http://www.amc.edu/patient/HIV/hivconf.htm)

CME Credits Available

### 14th National HIV/AIDS Update Conference (NAUC)

March 19-22, 2002

San Francisco, California

Sponsored by American  
Foundation for AIDS Research

Fee: before March 1: \$325;  
after March 1: \$375

(special rates available)

Visit: <http://www.amfar.org/cgi-bin/iowa/nauc/index.html>

CME credit available

### International Conference on Emerging Infectious Diseases

March 24-27, 2002

Atlanta, Georgia

Fee: before March 4: \$300;  
on-site: \$350

Visit: <http://www.cdc.gov/iceid/>

Call: C. Schable, 404.639.4581

Email: [cas1@cdc.gov](mailto:cas1@cdc.gov)

### Clinical Updates in Correctional Health Care

April 13-16, 2002

Fort Lauderdale, Florida

Visit: [www.ncchc.org](http://www.ncchc.org)

Fax: 773.880.2424

## INSIDE NEWS

### Treatment Efficacy Predicted in Six Days

*Lancet* 2001. 358 (9295): 1760-1765.

Findings from a new study are likely to change the clinician's approach to HIV management over the course of the next year. The new study looked at rates of change in viral load and found that the rate of decline of a patient's HIV after the first six days of treatment is a good predictor of the patient's long term response to treatment. Current guidelines indicate that providers should change a patient's treatment if the reduction in plasma HIV RNA is less than 0.50-0.70 log after four weeks of treatment or less than 1.00 log by eight weeks of therapy. This study has shown that much earlier predictions of treatment efficacy are possible. Critics warn that predicting treatment efficacy after six days of treatment is only valid if more is known about the patient's adherence to the drug regimen.

### HAART Therapy: One Week on, One Week Off?

*NIH Release, 12/3/01*

A new study from the National Institutes of Allergy and Infectious Diseases shows that cycling antiretroviral medications in a seven day-on, seven day off manner appears to reduce toxic side effects without reducing the drug's effectiveness. The study put 10 patients on a "structured intermittent therapy" regimen where they received combination therapy of stavudine, lamivudine, indinavir, and ritonavir for seven days followed by seven days of no medication before beginning the next drug cycle. All of the participants maintained their CD4+ count and viral load levels throughout the 32-68 week study. While there were no signs of drug-resistance in these patients, there were marked decreases in serum cholesterol and triglyceride levels. Larger scale trials are now underway. If these trials support the small-scale study and prove that there are no adverse effects, drug costs could be reduced by as much as 50%. Results from this study are expected to be released in February, at the annual Retrovirus conference. Practitioners and patients are advised to await definitive data before adopting this approach to HIV treatment.

### Condoms Available in the LA County Jail

*LA Times, 11/30/01*

Following the approval of the Los Angeles County Sheriff's Department, the Los Angeles County Jail (LACJ) has begun distributing condoms to its "self-declared" gay inmates. In the LACJ, gay inmates are segregated into separate housing units. Inmates are receiving condoms through an outside agency, which provides a weekly HIV/AIDS lecture and then distributes the condoms. Margaret Winter of the American Civil Liberties Union (ACLU) has said that the provision of condoms to self-declared gay men does nothing to protect the large numbers of men who

participate in sex in prison but do not self-identify as gay. Although having sex while incarcerated is a felony under California law, the sheriff's office has recognized the rising number of new HIV cases in the jail and is responding to the health crisis. The LACJ is the seventh correctional facility on the nation to begin distributing condoms, joining four other jails in New York City, Philadelphia, San Francisco and Washington, and two prisons, in Vermont and Mississippi.

### Hit Hard, Hit Early Dealt Another Blow: Delaying HAART May Be Safe

*JAMA* 2001. 286 (20): 2560-2567 and 2568-2577

Continuing the recent trend in HIV management studies, two separate studies appear to demonstrate that delaying HAART until a patient's CD4+ count drops to 200 cells/mL and has a high level of virus circulating in the bloodstream is safe. Although it took longer for patients with higher initial viral load levels to reach an undetectable level of virus, all patients had the same chance of having an undetectable viral load after 32 weeks of treatment. Furthermore, patients whose CD4+ count was between 200 and 349 at baseline fared just as well after 32 weeks of treatment as patients whose initial levels were higher than 350. While these findings have the potential to change treatment recommendations, experts caution that these results may not be the same for all patients, especially women, who exhibit different viral loads and may develop full-blown AIDS at lower levels of viremia than men.

### Risk of Vulvar Cancer Increased Among HIV-Positive Women

*Lancet* 2002; 359:108-113

A new study conducted by researchers from Columbia University notes that HIV-positive women are at increased risk for vulvar cancer as well as cervical cancer. A study group of 925 women was followed for 3 years. Women underwent twice-yearly gynecological examinations. At the start of the study, 6% of the 481 HIV-positive women had vulvovaginal/perianal condoloma acuminata or intraepithelial neoplasia compared to only 1% of the HIV-negative women. Throughout the course of the study, HIV-positive women who did not previously have vulvar cancer were 16 times more likely to develop vulvovaginal or perianal lesions compared with the HIV-negative women. Risk factors for developing lesions included HIV infection, decreased CD4+ count, HPV infection, and a history of frequent injection drug use.

## SELF-ASSESSMENT TEST FOR CONTINUING MEDICAL EDUCATION CREDIT

Brown Medical School designates this educational activity for 1 hour in category 1 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 July 31, 2002. The estimated time for completion of this activity is one hour and there is no fee for participation.

1. True or False: Human Papilloma Virus (HPV) can be transmitted vertically from mother to child.
  - a) True
  - b) False
  
2. Which of the following are high-risk subtypes of HPV (human papilloma virus) because they are associated with cervical cancer?
  - a) 6, 11
  - b) 42, 43, 44
  - c) 31, 33, 35, 51, 52
  - d) 16, 18
  - e) 16, 11, 33, 52
  
3. Which of the following treatment modalities will eradicate HPV (human papilloma virus)?
  - a) radical surgical excision
  - b) podophylin
  - c) trichloroacetic acid
  - d) radiation therapy
  - e) no treatment modality will eradicate the virus
  
4. For routine HPV screening, what is the current standard of practice for incarcerated HIV-positive women?
  - a) yearly PAP smears and visual inspection of the external genitalia
  - b) twice-yearly PAP smears and visual inspection of the external genitalia
  - c) PAP smears and visual inspection of the external genitalia once every-other year
  - d) PAP smears and visual inspection of the external genitalia once every three years
  - e) PAP smears and visual inspection of the external genitalia once every five years
  
5. If a patient has started abacavir (ABC) therapy within the past six weeks, which of the following symptoms might indicate that the patient is suffering from abacavir hypersensitivity syndrome?
  - a) a skin rash, fever, and nausea that subsides in 36 hours
  - b) herpes simplex virus flare-up
  - c) a skin rash, vomiting, and insomnia
  - d) vivid dreams
  - e) a skin rash, abdominal pain, and severe fatigue that persists beyond 72-96 hours

6. If a patient is diagnosed with abacavir hypersensitivity syndrome (AHS), that patient should NEVER restart what type of therapy (choose the one correct answer):
  - a) ABC (Abacavir or Ziagen)
  - b) ABC (Abacavir or Ziagen) or Trizavir (AZT/3TC/ABC)
  - c) AZT/3TC (Combivir)
  - d) DDI/D4T
  - e) Nelfinavir (Viracept)

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Main Article	5 4 3 2 1	5 4 3 2 1
HEPPigram	5 4 3 2 1	5 4 3 2 1
HIV 101	5 4 3 2 1	5 4 3 2 1
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