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HIV Hepp News Education Prison Project

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About Hepp

HEPP News, a forum for correctional problem solving, evolved out of ongoing discussions among HIV specialists based at the Brown University AIDS Program about the need for HIV updates designed for practitioners in the correctional setting. The board of editors includes national and regional correctional professionals, selected on the basis of their experience with HIV care in the correctional environment and their familiarity with current HIV treatment. HEPP News targets correctional administrators and HIV/AIDS care providers including physicians, nurses, outreach workers and case managers. Published monthly and distributed by fax, HEPP News provides up-to-the-moment information on HIV treatment, efficient approaches to administering such treatments in the correctional environment, national and international news related to HIV in prisons and jails, and correctional trends that impact HIV treatment. 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; please see last page for details.

The editorial board and contributors to HEPP News are well aware of the critical role prisons and jails play in the treatment and prevention of HIV. The goal of HEPP News is to provide reports of effective and cost-conscious HIV care that can truly be implemented within the correctional environment. We hope this newsletter achieves that goal.

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Faculty Disclosure

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Double Trouble: TB and HIV in the Correctional Setting

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The incidence of tuberculosis (TB) is three times higher inside correctional settings than outside, making mastery of TB treatment guidelines a "must" for correctional HIV professionals. Updated guidelines highlighting new regimens and clinical practices for the treatment of tuberculosis (TB) and human immunodeficiency virus (HIV) co-infected individuals were just published (CDC, 1998). The guidelines re-emphasize previously well-recognized principles of TB treatment, and extend these concepts to TB in the context of HIV co-infection. The following article will review these recent developments and provide insight into the complex issues surrounding the care of TB and HIV infected individuals in the correctional setting.

• Effect of TB/HIV Co-Infection

Initial studies of TB and HIV concentrated on the impact of HIV on the natural progression of TB. HIV infected individuals appear to be more likely to be infected with TB if exposed, compared to non-HIV infected individuals. Once infected, the natural history of TB progression from infection to disease and death may be telescoped into a matter of weeks in the HIV infected individual.

More recent studies have revealed that the impact of TB on the progression of HIV may be just as devastating. The host immune response to Mycobacterium tuberculosis (Mtb), the causative agent of TB, appears to increase HIV replication, both systemically and locally. In some patients with active TB, plasma HIV RNA levels (viral load) rise substantially before TB is diagnosed and viral loads fall with TB treatment alone (Havlir, Barnes, 1998). These facts serve therefore to underscore the absolute importance of prevention, early recognition and effective treatment of both TB and HIV in the correctional setting.

• Treatment of TB and HIV

Decisions regarding treatment of active tuberculosis are constrained by the choice of HIV treatment regimen (see Table 1, page 3, for a detailed summary of treatment regimens for TB/HIV co-infected patients). Therefore, the HIV infection status of the patient should be ascertained prior to initiation of TB prophylaxis or early in the treatment of active disease.

Two new classes of drugs, the non-nucleoside reverse transcriptase inhibitors (NNRTI's) and protease inhibitors (PI's), are known to interact with rifampin, one of the drug cornerstones of TB treatment. Rifampin, a potent inducer of the cytochrome P450 system, reduces the levels of PI's and NNRTI's in the plasma; reduction in plasma levels of these drugs to less than therapeutic levels may lead to the development of resistant mutations of the HIV virus. Furthermore, NNRTI's and PI's may impair the clearance of rifampin, thereby predisposing the patient to drug side effects.

One of the new CDC recommendations is to use rifabutin to replace rifampin in TB treatment regimens when patients are on NNRTI's and PI's. Because of the possibility that a rifabutin-containing regimen may reduce the long-term efficacy of the TB treatment regimen, it is now recommended that a four-drug regimen, including rifabutin, be used to treat TB for the first 2 months, even if drug susceptibility is demonstrated.

If the HIV infected patient is already on PI's or NNRTI's, interruption of the HIV treatment regimen is not recommended; modification of the

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LETTER FROM THE EDITOR

Greetings colleagues,

March winds bring hope for Spring, fresh air, and sunshine -- all balms for the human spirit. Once upon a time, not too long ago, fresh air and sunshine were the only available balms for tuberculosis, the disease then known as consumption. The good news is that treatment of tuberculosis (TB) has come a long way since patients were bundled in blankets and put out to sun at a sanitarium in the snowy hinterlands of this nation. The bad news is that TB has not disappeared along with the TB "sans," even though much more effective treatment is now available. TB, like its fellow traveler HIV, is a disease affecting marginalized populations. Lack of access to TB prevention and treatment is the main reason why TB still ferments among impoverished sub-populations of Manila, New Delhi, Johannesburg and among the denizens of our jail and prison systems.

Correctional populations are disproportionately affected by this silent plague. In the early 1990's, the New York correctional system witnessed a resurgence of TB of the multi-drug resistant variety (MDR TB) that had a tremendous impact on patients, health care providers and members of security staff (see MMWR 1992 Jul 17; 41(28): 507-9). Active intervention by the New York State correctional system in partnership with the Centers for Disease Control (CDC) and the New York Department of Health brought the epidemic of MDR TB under control.

Yet TB, like the mythical hydra, is a difficult beast to tame. This past month the CDC published a report on TB outbreaks in two California prisons (MMWR, 1998; 48(04):79-82; <http://www.cdc.gov/epo/mmwr/mmwr.html>). This report served to document, once again, the many problems associated with the diagnosis, treatment, and prevention of TB among HIV infected patients in the correctional setting. The index case patient at Prison A was HIV infected and anergic to TB skin testing and control skin tests on entry to the prison setting. Even though the patient had no symptoms, the TB screening protocol at Prison A called for three procedures to rule out TB: the PPD skin test, a chest x ray and sputum analysis. These procedures might have been considered excessive, had the patient not been incarcerated. Skin testing frequently fails to identify TB disease among incarcerated persons (Bellin, 1993) and chest x rays may fail to demonstrate abnormalities in patients who have both HIV and TB disease (Havir 1999).

Even though these excellent screening policies were in place, Prison A failed to recognize TB in this patient when it developed later on during his incarceration. The patient was treated for pneumonia with antibiotics before TB was finally diagnosed and he was placed in respiratory isolation. A second patient, at Prison B, received similar treatment for "pneumonia" before TB was finally diagnosed and he was placed in respiratory isolation. In both cases the diagnosis of TB was delayed until appropriate sputum specimens were sent. As a result, 20 contacts converted their TB (PPD) skin test, and nine additional contacts developed active tuberculosis.

In both cases, transmission of TB occurred because of a failure to "Think TB," to paraphrase the CDC dictum. In short, any HIV infected patient who has respiratory symptoms should undergo a chest x ray and screening for TB, regardless of whether prior screenings failed to find TB. A negative chest x ray does not exclude TB in an HIV infected patient who has other TB symptoms, such as fever and weight loss, and other discernible cause of fever.

I would like to call attention, while we are on the topic of TB, to a paradoxical phenomenon: the worsening of TB or the emergence of TB following the initiation of antiretroviral therapy in AIDS patients. This subject was reviewed in the American Journal of Critical Care and Respiratory Medicine (Narita M. et.al. Paradoxical worsening of tuberculosis following antiretroviral therapy in patients with AIDS. Am J Repir Crit Care Med 1998; 158:157-61.) and I have seen or heard of at least three patients with clinical courses fitting this description in the past year. The syndrome is characterized by clinical deterioration, increased adenopathy, development of "miliary" pulmonary infiltrates, effusions, and so on, soon after the initiation of HAART. The role of steroids in the treatment of these paradoxical exacerbations of TB symptoms remains to be determined. Be on the look out for this unusual manifestation of TB in the era of HAART!

TB in the setting of HIV infection is the topic of the lead article in HEPP News this month. The author, Jane Carter M.D., is the Director of the Rhode Island TB clinic and also participates in the care of TB-infected patients at a Federal correctional facility located in Rhode Island. TB prevention may be facilitated by this month's HEPPigram, which addresses helpful criteria for respiratory isolation in corrections. HIV 101 provides information on current treatment dosages and common side effects associated with TB medications. HIV providers reviewing the contents of this issue should be able to describe TB medications that cannot be used with protease inhibitors, name several possible approaches to treatment of TB in patients with HIV infection and list protocols for isolation of patients with suspected TB.

Next month we will bring you a full update from the 6th Conference on Retroviruses and Opportunistic Infections in Chicago. In the meantime, please take the time to write to us and let us know if our content and focus work for you! Thanks for joining us for this special issue on TB.

Sincerely,

Anne S. De Groot M.D.

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Double Trouble: TB and HIV in the Correctional Setting

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TB treatment to allow for the use of the PIs and NNRTIs is preferred. However, if the diagnoses of TB and HIV are made simultaneously, the relative risks of simultaneous initiation of therapy for both diseases versus the treatment of TB first must be considered on a case-by-case basis. Three options are available: (1) TB can be treated alone for at least 2 months with subsequent modification of the standard TB regimen (see Table 1); (2) TB can be treated for 6 months with subsequent initiation of HIV therapy; (3) Simultaneous HIV and TB treatment may be initiated with rifabutin, substituting rifampin if PIs or NNRTI's are used for HIV therapy. By implication, the clinician must assess whether it is appropriate to delay treatment of HIV infection in favor of treating TB disease. Delaying treatment of active TB disease, in favor of treating HIV first, is not a clinical option.

• Nonadherence to TB Treatment

Adherence to TB therapy has been empha-

sized for years as the most important principle in the treatment of TB disease. Concomitant treatment of TB and HIV requires meticulous adherence to both sets of drugs. The patient must be taught that each of the drugs has an effect on the other. For example, if the patient becomes nonadherent with the HIV medications, the serum rifabutin level will fall and may place the patient at risk for the development of drug resistant TB. Nonadherence in this scenario may lead not only to resistant TB, but also to resistant HIV. It does, therefore, entail a double risk.

• Treatment of Multi-Drug Resistant TB

Treatment of drug resistant forms of TB in the setting of HIV is not discussed in-depth here because it is complex and requires individualization. Identifying MDRTB by doing appropriate cultures is an important first step. Correctional HIV providers should send appropriate clinical specimens from every suspected or active TB case to competent microbiology laboratories for culture

and sensitivity testing. Should correctional providers identify a case of MDRTB, they should take the opportunity to obtain consultation with their state TB control officers and to confer with physicians experienced in the management of drug resistant TB.

• Directly Observed Therapy

Directly observed therapy (DOT) is accepted as the standard mechanism for ensuring adherence both inside and outside of the correctional setting and is recommended by the World Health Organization (WHO). The use of fixed dose combination pills is an additional option, which may eliminate the patient's ability to selectively uncouple drug regimens. Unfortunately, fixed dose combinations are not available for all drug combinations and no fixed dose combination is available that includes rifabutin. Because it is feasible in the correctional setting, DOT for all TB regimens (including prophylaxis) is already the standard of care.

continued on page 4

Table 1- Treatment Options for fully susceptible TB Disease in the setting of HIV infection. See HIV 101 in this newsletter for dosages.

6-month RFB-based therapy (may be prolonged to 9 months)

| INDUCTION PHASE | CONTINUATION PHASE | COMMENTS |
|--|--|---|
| Regimen A daily for 8 weeks or Regimen A daily for 2 weeks then 2-3 times a week for 6 weeks. | Regimen B daily for 18 weeks or Regimen B twice a week for 18 weeks | <i>RFB should not be used with ritonavir or delavirdine</i> |

9-month SM-based therapy (may be prolonged to 12 months)

| INDUCTION PHASE | CONTINUATION PHASE | COMMENTS |
|---|---|---|
| Regimen C daily for 8 weeks or Regimen C daily for 2 weeks then 2-3 a week for 6 weeks | Regimen D 2-3 times a week for 30 weeks | <i>May be used with PI's, NNRTI's or NRTI's</i> |

6 month RIF-based therapy (may be prolonged to 9 months)

| INDUCTION PHASE | CONTINUATION PHASE | COMMENTS |
|--|--|---|
| Regimen E daily for 8 weeks or Regimen E daily for 2 weeks then 2-3 times a week for 6 weeks or Regimen E 3 times a week for 8 weeks | Regimen F daily for 18 weeks or Regimen F 2 times a week for 18 weeks or Regimen F 3 times a week for 18 weeks | <i>No PI's or NNRTI's may be used with Rifampin</i> |

INH=isoniazid; RIF=rifampin; PZA=pyrazinamide; EMB=ethambutol; SM=streptomycin; RFB=rifabutin

Regimen A: INH, RFB, PZA, EMB.

Regimen B: INH, RFB.

Regimen C: INH, SM, PZA, EMB.

Regimen D: INH, SM, PZA. If SM is not used for the recommended 9 months, EMB should be added with prolongation of therapy to 52 weeks.

Regimen E: INH, RIF, PZA, EMB or SM. PZA is continued throughout the induction phase; EMB stopped after susceptibilities tests demonstrate susceptibility to INH and RIF.

Regimen F: INH, RIF.

In the correctional setting, all intermittent regimens are carried out under DOT conditions. Prolongation of regimens occurs in patients with delayed clinical response such as positive sputum cultures after 2 months or progression of signs and symptoms of TB beyond 2 months.

Double Trouble: TB and HIV in the Correctional Setting

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• Treatment of TB Infection (TB Prophylaxis)

Obviously it is much easier and safer to treat TB in its latent form than in its active form. Therefore, screening for TB infection is an important part of the annual health care evaluation of the HIV infected individual. A PPD (TB skin test) of greater than 5 mm in duration is considered to be an indication of TB infection in HIV infected individuals: 10 mm is the cutoff for incarcerated patients who are not HIV seropositive. Clearly, the HIV risk status of the patient should be assessed and HIV testing should be advised if appropriate, as HIV-infection status affects the interpretation of the TB skin test. Careful clinical history documentation may sometimes reveal a history suggestive of TB exposure, which would hold as much or greater weight in the decision to initiate therapy for TB infection as would a positive PPD. In fact, the most important requirement before initiating therapy for latent tuberculosis is a careful history and physical combined with appropriate radiographic screening to rule out active TB.

There are three options for the treatment of TB infection in the HIV infected individual. Note that the following regimens incorporate some new concepts in TB treatment. All of the following regimens should be provided via DOT in the correctional setting:

- 1) 9 months of isoniazid (INH). (270 daily doses over 9 months continuously or over 12 months, if interruptions occur, vs at least 76 doses of twice weekly doses over 9 months continuously or 12 months with interruptions.)
- 2) 2 months of rifampin (RIF) and pyrazinamide (PZA) administered daily. (60 doses over 2 months continuously or 3 months with interruptions.) Missed doses and/or intermittent therapy with rifampin and pyrazinamide, even under DOT conditions, is not an option.
- 3) 2 months of rifabutin and pyrazinamide administered daily may be

an option for patients on NNRTI's or PI's. This regimen has no clinical trial experience but is based on expert opinion. (Same dose count as option #2.)

Individuals who complete an adequate course of therapy (whether for TB infection or TB disease) require no specific follow-up screening care unless they have symptoms of active TB or are subsequently re-exposed to an individual with infectious TB. The problem here is how to ensure adequacy of therapy whenever DOT is not utilized.

Correctional HIV providers need to take advantage of their DOT option for these regimens. It is important to develop methods of confirming DOT: you may wish to ask the medline staff to keep a separate record of DOT treatment for TB, and to notify you if more than one dose is missed in a given period. Even if medline keeps track of a patient's adherence to TB medications, you may wish to keep your own records; a standard calendar can serve as a DOT flow sheet. While DOT may be facilitated by the correctional environment, continuity of care of a TB/HIV co-infected patient may be challenged by transfers between correctional facilities and treatment in the community setting.

The issues raised in this article serve to underscore the importance of close communication between service providers should a patient's TB and HIV regimens be administered by different physicians within the correctional and community settings.

References:

1. CDC. Prevention and treatment of Tuberculosis among individuals infected with Human Immunodeficiency Virus: Principles of therapy and revised recommendations. MMWR 1998; 47 (No. RR-20).
2. Havlir, DV, Barnes, PF. Tuberculosis in patients with Human Immunodeficiency Virus infection. NEJM, 1998; 340 (5): 367-373.

HIV 101

Standard Treatment Guidelines for Tuberculosis Disease

This chart provides a framework for the treatment of patients with TB disease. It is strongly recommended that TB treatment be undertaken in consultation with a physician who is experienced with TB management. Adapted from the National Tuberculosis Center pocket card. For more information, contact the National Tuberculosis Center at the New Jersey Medical School: Tel: 973.972.3270. Fax: 973.972.3268. Website: <http://www.umdnj.edu/ntbc>. TB Infoline: 1-800-4TB-DOCS

| Drug | Daily Dose | 2x weekly dose | 3x weekly dose | Side Effects/Toxicities* |
|---------------------------------|-------------------|-------------------|-------------------|--|
| Isoniazid (INH): PO | 5 mg/kg (300mg) | 15 mg/kg (900mg) | 15 mg/kg (900mg) | -hepatic enzyme elevation -hepatitis -peripheral neuropathy -CNS effects |
| Rifampin (RIF): PO or IV | 10 mg/kg (600mg) | 10 mg/kg (600mg) | 10 mg/kg (600 mg) | -orange discoloration of secretions and urine (occurs in all patients) -GI upset -hepatitis -bleeding problems -flu-like symptoms -rash |
| Pyrazinamide (PZA): PO | 15-25 mg/kg (2gm) | 50-70 mg/kg (4gm) | 50-70 mg/kg (3gm) | -GI upset -hepatitis -hyperuricemia -arthralgias -rash |
| Ethambutol (EMB): PO | 15-25 mg/kg | 50 mg/kg | 25-30 mg/kg | -optic neuritis (decreased red-green color discrimination, decreased visual acuity) |
| Streptomycin (SM): IM | 15 mg/kg (1 gm) | 15 mg/kg (1 gm) | 15 mg/kg (1 gm) | -Ototoxicity (hearing loss, vestibular dysfunction) -renal toxicity |

First line therapies are listed; parenthesis indicate the maximum dosage.

*Not all side effects and toxicities are listed. Check package insert or the Physician's Desk Reference for more complete information.

Note:

- If primary INH resistance is greater than 4% in the community, all patients should initially be started on a 4-drug regimen (INH, RIF, PZA, EMB or SM).
- Never add a single drug to a failing regimen or one that failed in the past.
- PZA and SM are contraindicated in pregnancy.

Ask The Expert

A 45 year old man has a positive PPD skin test (>10mm) on routine TB testing in prison. Upon admission to jail, he also tested positive and was started on INH. He was intermittently adherent despite DOPT, and after four weeks on treatment he reported that he developed nausea, vomiting and yellow skin on the medication. He was told "not to take it again" but was not started on different medication. He is now transferred to your prison. He is HIV seropositive, has a CD4 T cell count of 250, a viral load of 65,000 and he's been on combivir (AZT/3TC combination) without the addition of a third drug for the past year. He has a smoker's cough, but no fever and no night sweats.

What Would You Do?

Renee Ridzon, MD

Medical Officer, Surveillance and Epidemiology Division of Tuberculosis Elimination, Centers for Disease Control and Prevention, Atlanta, GA.

The patient who is at increased risk of reactivation of Mycobacterium tuberculosis infection because of his infection with HIV is a high priority candidate for preventive therapy, and an attempt should be made to provide an effective course of therapy to treat his latent infection. This man's history underscores the need for documentation of the positive tuberculin skin test result and toxicity to isoniazid. There should be an attempt to obtain medical records from the time of the described episode of nausea, vomiting and jaundice. My work up would certainly include a look for infectious agents, such as Hepatitis B virus or Hepatitis C virus, which may have contributed to or been responsible for the patient's symptoms of nausea, vomiting and jaundice. Before preventive therapy is started, I would perform a symptom check and a chest x ray to confirm that there is no active disease. This is especially important in this patient since he reports having a cough.

There are a few options for preventive therapy for tuberculosis. Regimens of isoniazid for nine months either as daily or twice weekly therapy or short course preventive therapy of rifampin or rifabutin plus pyrazinamide have been recommended by CDC for patients with HIV infection. Studies have demonstrated that short course preventive therapy of two months of daily rifampin and pyrazinamide is as effective in preventing tuberculosis disease in HIV infected persons as isoniazid preventive therapy. All persons receiving preventive therapy, even those without a prior history of therapy and/or untoward effects, should receive at least a monthly clinical evaluation for medication side effects.

One option I would consider for this inmate would be a careful rechallenge with isoniazid with monitoring, especially during the first several days of therapy, of hepatic enzymes and symptoms. If given twice weekly, isoniazid must be given in a directly observed manner. Preventive therapy with pyrazinamide and rifampin for two months is another option and may be preferable, especially if there is documentation of significant hepatotoxicity with prior isoniazid treatment.

This patient's antiretroviral therapy of 3TC and AZT is inadequate. Consideration should be given to starting him on a regimen of highly active antiretroviral therapy (HAART) which usually contains a protease-inhibitor. There are significant drug interactions between rifamycins, specifically rifampin, and the protease inhibitors and some non-nucleoside reverse transcriptase inhibitors. If I were to treat the patient with short course preventive therapy, I would handle the antiretroviral regimen in one of two ways. Start of HAART could be delayed for two months until the short course preventive therapy is completed. Alternatively, HAART could be started and a modified short course regimen would be used with pyrazinamide and substitution of rifabutin for rifampin. Use of rifabutin is contraindicated with ritonavir, hard-gel saquinavir and delavirdine and data on the use of rifabutin with soft-gel saquinavir, aprenavir, efavirenz and nevirapine is limited. When rifabutin is used in combination with indinavir, the dose of indinavir should be increased to 1200 mg every eight hours and the dose of rifabutin should be reduced to 150 mg daily. In this patient with a history of nonadherence to therapy, preventive therapy should be delivered in an observed manner.

Reference:

1. CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: principles of therapy and revised recommendations. MMWR 1998;47 (RR-20).

Resources

TELEPHONE NUMBERS:

PEP Registry:

888.737.4448

National Clinicians' PEP Hotline:

888.448.4911

National TB Center at the NJ Medical School:

973.972.3270

TB Infoline:

800.4TB.DOCS

National HIV Telephone Consultation Service:

800.933.3413

CDC National AIDS Hotline (24 hours):

800.342.AIDS

Francis J Curry National Tuberculosis Center

415.502.4600

WEBSITES:

AIDS Treatment Data Network

<http://204.179.124.69/network>

The Body: An AIDS Information Resource

<http://www.thebody.com>

The Corrections Connection

<http://www.corrections.com>

Immunet and AIDS Treatment news

<http://www.aids.org>

International Association of Physicians in AIDS Care (IAPAC)

<http://www.iapac.org>

JAMA (Journal of the American Medical Association) HIV/AIDS Information Center

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

Johns Hopkins AIDS Service,

<http://www.hopkins-AIDS.edu>

Medscape HIV/AIDS

(formerly known as Clinical Care

Options for HIV)

<http://hiv.medscape.com/Home/Topics/AIDS/AIDS.html>

TB WEBSITES:

Francis J Curry National Tuberculosis Center

<http://www.nationaltbcenter.edu>

Post-Exposure Prophylaxis Network

<http://epi-center.ucsf.edu/PEP/pepnet.html>

NJ Medical School

<http://www.undnj.edu/ntbc>

Brown University

TB/HIV Research Lab

http://www.brown.edu/Research/TB-HIV_Lab/

CDC TB Report

<http://www.cdc.gov/epo/mmwr/mmwr.html>

Tuberculosis in United States' Correctional Facilities

Mark N. Lobato, MD
 Medical Officer, Field Services Branch,
 Division of TB Elimination
 NCHSTP, CDC

Tuberculosis (TB) is an important public health issue in correctional facilities (1). In 1997, 729 TB cases were reported from correctional facilities, representing almost 4% of national cases reported to the Centers for Disease Control and Prevention (CDC) (2). Multiple factors account for the high rates of TB infection and disease found among the incarcerated population, primarily risk factors of the individual inmates themselves (5). Conditions associated with TB, such as poverty, drug use and HIV infection, are more common in the incarcerated population than in the general population (3). However, overcrowding in correctional facilities is an independent risk factor for the acquisition of TB infection by inmates (6). Despite widespread efforts to reduce transmission within correctional facilities, TB outbreaks within correctional facilities continue (4).

The CDC's publication in 1996 of Recommendations for the Prevention and Control of Tuberculosis in Correctional Facilities standardized measures to control TB in correctional facilities. Correctional facilities have the responsibility to assure that TB transmission does not occur in the facility by mandating screening of inmates and staff (7). When active disease is detected or suspected, potentially infectious persons should be isolated in a negative pressure room and administered adequate treatment (8). If transmission does occur, the facility should have a response plan in place to curtail ongoing transmission that may threaten staff, inmates and the community at large (9). Assessment of TB screening and prevention efforts is an

integral component of TB control in correctional facilities (6).

Correctional facilities are important arenas for public health testing, treatment and prevention of TB, HIV and STDs. Another critical challenge for TB control and prevention in correctional facilities is to ensure that inmates who are receiving treatment for TB disease or infection have adequate discharge planning to improve continuity of care (10). Because almost all inmates will eventually return to the community, interventions to prevent the spread of TB in correctional facilities can make an important contribution to the elimination of tuberculosis.

References

- Hutton MD, Cauthen GM, Bloch AB. Results of a 29-state survey of tuberculosis in nursing homes and correctional facilities. *Public Health Reports* 1993;108:305-314.
- CDC, Reported tuberculosis in the United States, 1997 (Atlanta, July 1998), Table 14, p. 25.
- Harlow CW. Profile of jail inmates 1996. Bureau of Justice Statistics, NCJ 164620. Washington D.C., April 1998.
- Jones T. Tuberculosis in a Tennessee jail. *Epidemiology Grand Rounds, CDC*. August 18, 1998; Atlanta, Ga.
- Kendig N. Tuberculosis control in prisons. *IJTLD* 1998;2:S57-S63.
- MacIntyre CR, Kendig N, Kummer L, Birago S, Graham NMH. Impact of tuberculosis control measures and crowding on the incidence of tuberculosis infection in Maryland prisons. *Clin Infect Dis* 1997;24:1060-1067.
- CDC. Prevention and control of tuberculosis in correctional facilities: recommendations of the Advisory Council for the Elimination of Tuberculosis. *MMWR* 1996;45(No. RR-8):1-27.
- Simone PM, Puisis M. Tuberculosis screening. In: Puisis M, ed. *Clinical Practice in Correctional Medicine*. Mosby, St. Louis, 1998:101-108.
- Stead WW. Undetected tuberculosis in prison. *JAMA* 1978;240:2544-2547.
- Tulsky JP, White MC, Dawson C, Hoynes TM, Goldenson J, Schechter G. Screening for tuberculosis in jail and clinical follow-up after release. *Am J Public Health* 1998;88:223-226.

Table: Prevalence of TB infection among inmates, 1997

Most systems reported a low prevalence of TB infection among inmates (21 of 51 state systems for a total of 6,515 cases). A few systems reported extremely high TB infection prevalence rates (one state or federal system and five city or county jails) accounting for more than a third of the total number of cases.

| % positive skin test | State and Federal Prison Systems | | | City and County Jail Systems | | |
|----------------------|----------------------------------|-----|--------|------------------------------|-----|--------|
| | n systems | % | cases | n systems | % | cases |
| < 5% | 21 | 41 | 6,515 | 12 | 29 | 6,131 |
| 5-9.9% | 3 | 6 | 7,200 | 11 | 27 | 8,162 |
| 10-20% | 1 | 2 | 1,283 | 5 | 12 | 16,165 |
| No report | 26 | 51 | -- | 13 | 32 | -- |
| Total | 51 | 100 | 14,998 | 41 | 100 | 30,458 |

Source: NIJ/CDC 1997 survey: Tuberculosis in correctional facilities

News Flash

News Flash from the 6th Conference on Retroviruses and Opportunistic Infections, January 31 to February 5, 1999. To see these abstracts in full, see the following website:

<http://www.retroconference.org/99>

A study conducted by Jody Rich, M.D., of the Brown University AIDS Program, and a team including Anne Spaulding, M.D., Medical Director of the Adult Correctional Institution of Rhode Island, found that HBV and HCV prevalence rates are higher than HIV prevalence rates among Rhode Island women inmates. HIV seroconversion was significantly correlated with intravenous drug use. Rich et al. concluded that the prison population represents an opportunity for the treatment and prevention of blood-borne infections (Abstract No. 478).

A team of researchers from the Brown

University AIDS Program and the Harvard Medical School, led by Ken Mayer, M.D., and including Susan Cu-Uvin, M.D., and Timothy Flanigan, M.D., found that treatment of various causes of vaginitis (including bacterial vaginosis, trichomoniasis and herpes simplex virus) lowered viral load in the vaginal secretions of 22 women. Vaginitis treatment may decrease CV in HIV RNA, but effects of treatment on genital WBC and cytokines are highly variable, reflecting the complex micro-environment of the genital tract (Abstract No. 467).

An additional study led by Susan Cu-Uvin and including the previously mentioned researchers found a significant correlation between the detection of HIV-1 RNA in the genital tract and both Peripheral Viral Load (PVL) and CD4 cell count. Women on HAART were

more likely to have Cervical Viral Load (CVL) HIV-1 RNA at <400 copies/ml. Women on any retroviral therapy were more likely to have CVL HIV-1 RNA at <400 copies per ml.

Frederick Altice, M.D. et al of the Yale University AIDS Program presented a study showing that Nevirapine, a potent inducer of the P450 enzyme system, may induce metabolism of methadone and clinically precipitate opiate withdrawal in patients receiving both medications. These results have important implications for HIV therapeutics in opiate-addicted persons and emphasize the need to perform drug interaction studies in this population (Abstract No. 372).

Next month's issue will focus on a more detailed discussion of the The 6th Conference on Retroviruses and Opportunistic Infections.

HEPPigram

A feature of HEPP News providing concise solutions to correctional HIV-related problems

| Routine Office Visit TB Isolation Guidelines* | | | | | |
|---|------------|------------|-------------|-------------|--|
| Case | PPD status | HIV status | Symptoms | Chest X-ray | Procedure |
| A | + | - | no | normal | - no isolation needed - evaluate whether appropriate for TB Px |
| B | + | - | cough/fever | normal | - evaluate for non-TB causes of fever - rule out HIV (which may obscure x-ray findings) - re-evaluate need for isolation and further evaluation if in a high risk group for HIV or HIV seropositive (see row D) |
| C | + | - | cough/fever | abnormal | - evaluate for non-TB causes of fever - consider isolation while undergoing evaluation if no other obvious cause of illness - send sputum, urine, blood for AFBx3 and AFB culture - reasons to isolate: if clinical suspicion of TB if known TB contact if known to be previously "partially treated" for TB if cough and fever is accompanied by other TB Sx |
| D | + | + | no | normal | - no isolation needed - strongly consider TB prophylaxis |
| E | + | + | cough/fever | normal | - isolate (unless other causes of cough/fever are obvious): this is an important "clinical judgment call". Remember to "Think TB!" - send specimens for AFBx3 and AFB culture - reasons to strongly consider isolation: if clinical suspicion of TB if recent TB contact if known to be previously "partially treated" for TB if cough and fever is accompanied by other TB Sx |
| F | + | + | cough/fever | abnormal** | - isolate - evaluate for TB among other possible causes for this constellation of findings - send sputum, urine, blood for AFBx3 and AFB culture - consult TB treatment expert |

*This chart provides general guidelines for isolation procedures for TB control in prisons. The details, however, should be considered on a case by case basis.

**Classically, TB would present with apical infiltrates. However, TB in the HIV infected individual can present in middle/lower lobe infiltrates OR nodular infiltrates; OR any location cavity, etc.

Save The Dates

Improving the Management of HIV Disease

March 24, 1999 New York, NY

April 21, 1999 Chicago, IL

May 8, 1999 Cleveland, OH

Reviews the most recent developments in the field of HIV disease pathogenesis and antiretroviral management. Expert faculty will speak on timely and clinically relevant issues in the management of HIV disease.

Sponsored by: International AIDS Society-USA (IASUSA)

Contact: IASUSA

tel: 415.561.6725

fax: 415. 561.6740

e-mail: info@iasusa.org

website: www.iasusa.org

11th National HIV/AIDS Update Conference: Partnering Science and Practice

March 23-26, 1999

Sponsored by: AmFar (www.nauc.org)

Bill Graham Civic Auditorium

San Francisco, CA

Contact: KREBS Convention Management Services

tel: 415.920.7000

fax: 415.920.7001

e-mail: krebsconv@aol.com

website: www.citysearch.com/sfo/krebs

1999 Community Planning Leadership Summit for HIV Prevention

March 24-27, 1999

Sponsored by: AED, CDC, NASTAD, NMAC

Pittsburgh Hilton & Towers, Pittsburgh PA

Contact: Harry Williams at NMAC

tel: 202.483.6622

fax: 202.483.1127

Management of HIV/AIDS in the Correctional Setting: Neurological Manifestations of HIV

May 11, 1999 12:30-3:30 p.m. EST

This live, interactive satellite videoconference series addresses clinical issues in the management of HIV infected inmates. No registration fee. CME credit offered.

Sponsored by: the Division of HIV Medicine at Albany Medical Center in cooperation with the NYS Department of Correctional Services, the NY/Virginia Islands AIDS Education and Training Centers, and the NYS Centers for STD/HIV Prevention Training.

Contact: Carol Kiner

tel: 518.262.4674

e-mail: kinerc@mail.amc.edu

AIDS and Tuberculosis: International Conference in Pulmonary and Critical Care Medicine

April 23-28, 1999

This yearly conference has become the premier, international forum for physicians and scientists who work in pulmonary and critical care medicine.

Sponsored by: The American Thoracic Society

Contact: The American Thoracic Society

tel: 212.315.8700

fax: 212.315.6498

website: <http://www.thoracic.org/ic99/welcome.html>

Ryan White Title III HIV Planning Grant Program Pre-Application Workshop

March 24, 1999, Jackson, MS

April 7, Cleveland, OH

April 9, Memphis, TN

April 12, Los Angeles, CA

April 14, Houston, TX

April 16, Denver, Co

The Ryan White Title III HIV Planning Grant Program provides up to \$50,000 for one year of funding, with the possibility of second-year transitional grant, to support communities and health care service entities in their efforts to plan the establishment of HIV primary health care services, including identifying needed components of care and forming linkages with providers in the community. This grant program supports activities of the planning process and does not fund any service provision of patient care.

Sponsored by: U.S. Department of Health and Human Services, HRSA

Contact: PSA Conference Department, attention of Jason Linkins

tel: 703.852.2927

fax: 703.852.2901

website: <http://www.psava.com>

HIV Care: The Next Decade

April 22, 1999, 8:30-2:30

Topics to be covered include substance abuse, salvage therapy and metabolic complications, clinical and community-based HIV research, new antiretroviral therapy approaches and antiretroviral treatment updates.

Sponsored by: People With AIDS Coalition of New York, The NY Academy of Medicine, Information Outreach, Bristol Meyers-Squibb, Dupont, Upjohn and Roche Pharmaceuticals

Contact: People With AIDS Coalition of New York

tel: 800.828.3280

fax: 212.647.1419

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FACILITY: _____ (Optional) # of Inmates: _____

ADDRESS: _____

FAX: _____ PHONE: _____

SIGNATURE: _____ DATE: _____

Self-Assessment Test for Continuing Medical Education Credit

Brown University School of Medicine 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 May 15, 1999. The estimated time for completion of this activity is one hour and there is no fee for participation in this activity.

1. Which of the following HIV medications is most likely to interact with rifampin:

- a) Zidovudine (AZT, ZDV, Retrovir)
- b) Saquinavir (SQV-HGC, Fortovase)
- c) Stavudine (D4T, Verit)
- d) Lamivudine (3TC, Epivir)
- e) none of the above

2. An HIV-infected patient on a regimen of Zidovudine + Didanosine + Nevirapine is found to have active TB. Which of the following is an appropriate treatment option?

- a) interruption of HIV regimen in order to begin TB treatment
- b) delay of TB treatment in order to initiate another HIV regimen
- c) concomitant treatment of TB and HIV with a Rifampin-based combination TB treatment regimen
- d) concomitant treatment of TB and HIV with a Rifabutin-based combination TB treatment regimen
- e) all of the above

3. In the setting of HIV infection, the continuation phase of rifampin-based treatment of TB disease involves Directly Observed Therapy with:

- a) daily doses of Rifampin and Isoniazid for 18 weeks
- b) 2x/week doses of RIF and INH for 18 weeks
- c) 3x/week doses of RIF, INH, Pyrazinamide, and Ethambutol for 18 weeks
- d) 3x/week doses of RIF, INH, PZA and Streptomycin for 18 weeks
- e) any of the above

4. Which of the following is not an individual risk factor associated with TB among incarcerated populations?

- a) overcrowding in correctional facilities
- b) drug use
- c) poverty
- d) HIV infection
- e) none of the above

5. Depending on the patient's stage of HIV infection, start of HAART therapy in an untreated TB/HIV co-infected patient can be delayed for 2 months until a short course of TB preventive therapy has been completed.

TRUE or FALSE

HEPP News Evaluation

5 Excellent 4 Very Good 3 Fair 2 Poor 1 Very Poor

1. Please evaluate the following sections with respect to:

| | educational value | | | | | clarity | | | | |
|---------------|-------------------|---|---|---|---|---------|---|---|---|---|
| main article | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
| case study | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
| HEPPigram | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
| updates | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
| save the date | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |

2. Do you feel that HEPP News helps you in your work?

Why or why not?

3. What future topics should HEPP News address?

4. How can HEPP News be made more useful to you?

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