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IDCR

INFECTIOUS DISEASES IN CORRECTIONS REPORT
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ABOUT IDCR

IDCR, a forum for correctional problem solving targets correctional physicians, nurses, administrators, outreach workers, and case managers. Published monthly and distributed by fax and email, IDCR is ACCME accredited and free of charge. Since its founding in 1998, IDCR has served as an important resource for correctional health care providers by offering the newest and most relevant information on the management and treatment of infectious diseases within the correctional setting. Continuing medical education credits are provided by Medical Education Collaborative (MEC). This publication is jointly sponsored by IDCR and MEC. This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of MEC and IDCR. MEC is accredited by the ACCME to provide continuing medical education for physicians.

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HIV MEDICATIONS AND BODY FAT

- **Spotlight I:**
Introducing the Newest Antiretroviral Medications
- **HIV 101:**
Changes in the Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents, December 2007

OBJECTIVES

- The learner will be able to describe the body shape changes commonly associated with HIV infection and some of the strategies related to treating these changes.
- The learner will be able to discuss the newest antiretroviral medications indicated for the treatment of HIV-1.
The learner will be able to explain the changes in the The US Department of Health and Human Services newest guidelines
- for the use of antiretroviral agents in HIV-1-infected adults and adolescents.

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Purpose Statement

The purpose of this monograph is to increase the knowledge of physicians in correctional systems on understanding management options for visceral fat accumulation and wasting - metabolic complications associated with the use of some antiretroviral therapies.

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HIV MEDICATIONS AND BODY FAT

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The Case of the Progressively Prominent Paunch

A 39-year-old man who has been incarcerated for the last two years enters the clinic for a return appointment. Leaning back against the examination table he places both hands on his abdomen and says, "Doc, how come my belly got so big?" You eye the swell of his generous midsection, laterally demarcated by the straining buttons of his prison-issue work shirt and have to agree his midsection is growing. The patient started a cocktail of HIV medications eight months ago. His HIV viral load has fallen to below the limit of detection for the assay and his CD4 cell count has rebounded by over 100 cells. He has tolerated the medications and is obviously adherent to his regimen. His weight

was 150 pounds when he entered prison and quickly rose to 158 pounds with cessation of crack cocaine and the availability of three meals a day. Since starting HIV medications his weight increased another 6 pounds. As a well read HIV clinician, you look him in the eye and shrug.

What causes HIV-therapy associated fat accumulation remains a mystery. It has become clearer that what was originally described as 'crix-belly' - after the protease inhibitor first linked to this body shape change (indinavir) - cannot be ascribed to any one antiretroviral or even a HIV drug class. Studies of a variety of antiretroviral regimens, including those containing protease inhibitors (with or without ritonavir) and non-nucleoside reverse transcriptase inhibitors (NNRTIs), have demonstrated abdominal fat gains during therapy.¹⁻⁴ Data from a large cohort of men with and without HIV infection indicate that both groups experience increases in waist circumference over time - HIV therapy, however, accelerated the growth of girth.⁵ Therefore, this undesirable pattern of fat gain during HIV therapy seems to be associated not so much with particular HIV therapy per se, but with HIV therapy-mediated improvements in health.

Uncovering the mechanisms underlying the preferential accumulation of deep visceral fat is one of the great challenges in HIV therapeutics research.

You say as much to your patient, his hands still resting on his bulging middle. You explain that switching his HIV medications to an alternative seems imprudent as it is unclear that any new combination would have a different effect on belly fat. There are few data regarding the effects of stopping HIV medications altogether on fat accumulation but data from one study of treatment interruptions indicates this is a hazardous strategy in that those stopping treatment experienced higher rates of bad things happening to them including cardiovascular, renal, hepatic and other adverse events.⁶ Unfortunately, studies of therapeutic interventions for visceral fat accumulation have not produced a treatment that can be resoundingly embraced. The best studies indicate that the diabetes drug rosiglitazone does not work and recent data raise concerns regarding the general use of this drug.⁷ Pioglitazone has not been well studied in the setting of HIV infection. Metformin may reduce waist size slightly through unclear mechanisms but this effect seems to be restricted to those with glucose intolerance.⁷ Growth hormone does reduce visceral fat but also reduces subcutaneous fat and is extremely expensive, and at the doses studied in HIV infected patients has been generally poorly tolerated.⁸ Of note, although growth hormone has been found to have some effect on visceral fat in clinical trials, such treatment is outside of the approved indication of this agent. Growth hormone releasing factor is under study for HIV-associated fat accumulation.⁹

An important consideration when confronted with a protuberant midriff in a patient with HIV infection is obesity. Not all big bellies are lipodystrophy. Yet, it can be difficult to distinguish between visceral fat accumulation and the increased subcutaneous abdominal fat associated with excess caloric intake by physical examination alone. CT scanning or MRI can distinguish between deep fat accumulation and the more ubiquitous pinch-an-inch fat but, while this information may be useful to the patient concerned, and their abdominal girth increase is an adverse effect of their medication, these are expensive tests and both can respond to aerobic exercise and diet modification - interventions that are cost-effective and widely available.¹⁰

Certainly other causes of abdominal distension should be considered, such as ascities. In addition, a work-up for glucose intolerance pursued with fasting glucose levels and two-hour oral glucose tolerance testing. Those with glucose intolerance and certainly diabetes mellitus may benefit from an oral hypoglycemic such as pioglitazone or metformin or insulin in terms of glycemic control and possibly visceral fat volume. A fasting lipoprotein profile should be ordered given the association between body shape changes and dyslipidemia in persons with HIV infection. In all cases a careful dietary intake history needs to be conducted to make certain canteen purchases are not driving fat gain and rigorous exercise advocated, even if just fast walking, if possible.

Facing Fat Loss

For the next patient to arrive in clinic, fat gain is not the problem. He is slender and on the muscular side but his face looks slightly gaunt. The naso-labial fold is more pronounced than expected for a 34-year-old man while there is a

LETTER FROM THE EDITOR

Dear Correctional Colleagues,

Potent HIV treatments have rendered HIV infection a chronic condition for most of those living with the virus in the U.S. A sign of the long term nature of HIV disease is the attention being paid to cardiovascular and metabolic complications of HIV and its therapies. Within a little over a decade, we have shifted much of our attention from the prevention of opportunistic infections to prevention of heart disease, diabetes and the cancers that accompany aging. As an infectious diseases specialist who turned away from a career in primary care, it is with some irony that I find myself ordering lipid profiles, DEXA scans, glycosylated hemoglobin levels and screening colonoscopies.

Within the constellation of metabolic problems one that is of particular concern to patients is morphologic changes. Loss of fat in the face and arms or abnormal accumulation of fat in the abdomen can be disfiguring and distressing to patients, threaten adherence to HIV medications and risk disclosure of HIV status. Much remains to be learned about the causes of these vexing body shape changes but it is becoming clearer that some of our original assumptions about the etiologies of these complications were not correct. In this issue, two cases of body shape changes in HIV-infected inmates are presented and discussed. The approaches taken in these cases will, I hope, highlight the current thinking about the association between these changes and HIV medications and approaches to their management.

Also in this issue is a brief overview of three of the newest medications to treat drug-resistant HIV infection by Dr. Neil Fischer. These medications are particularly important to patients with few remaining therapeutic options and appropriate application of these medications will go a long way to preserving their activity.

Finally, this issue of *IDCR* is my last as Chief Editor. Serving as Chief Editor has been a wonderful experience that has allowed me the opportunity to speak with many of you about the issues we care about. Repeatedly, you have told my colleagues and I how much you appreciate the newsletter and your comments have sustained me through late night re-writes and last minute frenzies to get *IDCR* to you. I now hand the baton to my esteemed colleague Dr. Joseph Bick. I can think of no steadier hand to guide *IDCR* into 2008 and beyond. It takes a bunch of people to make *IDCR* possible. I wish to thank Elizabeth Closson, our Managing Editor, for her tireless efforts to make the newsletter a success, Annie DeGroot for her leadership, our thoughtful Editorial Board and, you, our readers for your profound commitment to the care of your patients.

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P.S. New (2007) modified format on first page is made to comply with the ACCME requirements

HIV MEDICATIONS AND BODY FAT... (continued from page 2)

hollowing at his temples. He has been incarcerated for six years and was diagnosed with HIV on intake. He initiated zidovudine, lamivudine and efavirenz and has successfully continued on that regimen since with excellent virologic and immunologic responses. When asked he says he has noticed that his face appears thin and that sometimes people ask him if he is sick. The muscles in his arms are prominent but he thinks this is because he lifts weights. His appetite is good and his weight has been stable during his incarceration. He smokes a pack of cigarettes a day.

Fat wasting of the limbs and face appears to be more common than visceral fat accumulation in HIV-infected persons.¹¹ The loss of fat can be subtle and go unnoticed. In correctional and community clinics few patients are examined unclothed and, therefore, opportunities to observe changes in the thighs, buttocks and upper arms – regions where fat loss may be most pronounced – are missed. Facial fat loss often prompts patients to raise this problem with their clinician and frequently it is when facial thinning is mistaken by others for illness that patients become concerned.

In this case you may have more to offer your patient. As opposed to fat accumulation, wasting of subcutaneous adipose tissue of the limbs, face and abdomen has been directly linked to specific HIV medications. Both the thymidine analogues stavudine and zidovudine have been found to be associated with limb fat loss regardless of the companion drugs.¹² A recent AIDS Clinical Trials Group (ACTG) trial that compared ritonavir-boosted lopinavir with the NNRTI efavirenz in treatment-naïve patients taking zidovudine, tenofovir or stavudine plus lamivudine found that nucleoside selection influenced fat loss.¹ As expected stavudine was the worst offender but zidovudine also produced significant fat loss in the limbs as measured by DEXA scans. Fat loss during tenofovir based therapy was much less common. Importantly and surprising to many was that participants receiving efavirenz had more fat loss than those on the protease inhibitor, regardless of which nucleoside was co-administered. A third study group that received lopinavir/ritonavir plus efavirenz with-

out any nucleoside analogues experienced a net gain of limb fat that continued during 96 weeks of study follow-up.

These data suggest that zidovudine can contribute to fat loss, especially when taken with efavirenz. In patients with signs of lipoatrophy a switch in HIV treatment is justifiable. Data from studies in which stavudine or zidovudine were substituted with tenofovir or abacavir demonstrated objective improvements in limb fat following the switch.¹³⁻¹⁵ These improvements, however, were modest, slow to accrue and were not always appreciable to participants. However, switching did seem to prevent subjective worsening of lipoatrophy.

Beside antiretroviral substitution there is little else to offer patients with lipoatrophy. As in the case of fat accumulation, the data on diabetes drugs are not impressive. Androgens are lipolytic and can make matters worse. The nucleoside uridine is under study for HIV-associated fat wasting. Reconstructive procedures such as poly-lactic acid injection into the facial subcutaneous tissue can improve appearance but is unlikely to be available for incarcerated patients.

You discuss the options with the patient, explaining that his HIV medications may well be responsible for the loss of fat in his face and limbs and left on the current regimen his fat loss can progress. You discuss the switch options. He can move to a new regimen devoid of both zidovudine and efavirenz. This will require more pills and he is less than enthusiastic about such an approach. An alternative he finds much more attractive is to change to fixed dose tenofovir, emtricitabine, efavirenz – which eliminates just the zidovudine. The reduction in pill count sweetens this unexpected change in medication and he agrees to this change. The above-mentioned ACTG study found that only 12% of those taking tenofovir, lamivudine and efavirenz experienced a 20% or greater loss in limb fat during 96 weeks compared to 40% of those who received zidovudine with their lamivudine and efavirenz.¹

The patient is counseled regarding the potential adverse effects of his new regimen and also encouraged to stop smoking as part of preventive health. Fasting lipid levels are

obtained given the association between fat changes and dyslipidemia and rechecked eight weeks later. He tolerates the switch well and during follow-up continued monitoring of his lipoatrophy will be conducted.

Summary

These two cases present both sides of the issue of body shape changes being seen during HIV infection. But, perhaps the most common fat change in HIV-infected persons is general obesity.¹⁶ Unique strategies to address this common problem in HIV-infected patients have not been studied and in their absence we rely on the techniques developed for the general population – exercise, caloric restriction and dietary modification. One of the strongest predictors of mortality in the developed world is waist circumference and recognizing the health risks attending obesity, including dyslipidemia and diabetes, is paramount in our patients with HIV infection.

Fat changes that may be more specific to the HIV-infected population than the general population – visceral fat accumulation and subcutaneous lipoatrophy – remain a challenge to patients and their clinicians. For visceral fat accumulation, there are frustratingly few therapeutic options above and beyond the standard lifestyle interventions. Switching HIV medications has not been consistently demonstrated to substantially change visceral adipose tissue volume and treatment options are limited. Growth hormone works but is impractical and poorly tolerated. In the case of lipoatrophy, substitution of thymidine analogues is a reasonable approach to prevent worsening if not reversal of subcutaneous fat loss.

Clearly, in both disorders, the gap in our understanding of the underlying pathogenesis is vast and our ability to offer our patients answers, let alone treatment, meager. Until we have the answers we need, we must help our patients and colleagues not fill the data vacuum with perception and mistaken belief. Data from a number of clinical trials have made the relationships between HIV therapies and body fat changes clearer and have dispelled some of the myths we had come to accept as fact. As we learn more about the mysteries of fat change during HIV treatment we need to also learn to avoid assumption and leaps of faith.

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SPOTLIGHT I: INTRODUCING THE NEWEST ANTIRETROVIRAL MEDICATIONS

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It was 20 years ago, in 1987, that zidovudine (AZT) was approved for the treatment of HIV infection. At that time, few could have imagined that HIV/AIDS would now be managed as a chronic disease. In 1987, few could also have imagined, with more than 30 approved antiretrovirals, patients would harbor viruses with resistance to multiple antiretroviral agents. To multiple antiretroviral medications. Drug resistance has made an increasing number of HIV-infected patients see their treatment options dwindle. Two new Food and Drug Administration (FDA)-approved medications, maraviroc and raltegravir, are now available to manage patients infected with highly resistant virus. A third medication, etravirine, is under FDA review for approval and a decision is expected in January, 2008. These new medications are profiled below.

Raltegravir, an integrase inhibitor, was approved by the FDA in October, 2007 for use in combination with other antiretroviral agents for the treatment of treatment-experienced adult HIV-infected patients who have evidence of ongoing viral replication and HIV strains resistant to multiple antiretroviral agents. This is the first drug of a completely new class of antiretrovirals, the integrase inhibitors. By being in a novel class, there is no known cross resistance between raltegravir and other presently available agents. Integrase inhibitors work at blocking HIV integrase, an enzyme that plays an essential role in integrating the viral DNA into the host cells' chromosomes. The approved dose of raltegravir is 400 mg (1 tablet) administered orally, twice daily, with or without food. Raltegravir was studied in two identical international studies of heavily antiretroviral-experienced patients. Participants were randomized to raltegravir or placebo along with an optimized background of antiretrovirals selected by the participant's clinician. These trials demonstrated significantly better virologic and immunologic outcomes over 24 weeks of study for those assigned to raltegravir. Importantly, the benefit of raltegravir was enhanced when one or more other active agents (such as darunavir and/or enfuvirtide) were also included in the antiretroviral mix. The medication was generally well tolerated in these clinical trials. The most common adverse reactions observed were nausea, headache, diarrhea and pyrexia; there were no major differences in the rate of these complications between those assigned the drug or placebo arms of the study. Creatine phosphokinase elevations were observed in some patients receiving raltegravir and it is suggested the drug be used with caution in patients at increased risk of myopathy or rhabdomyolysis, such as those also receiving statins. As with many other antiretroviral medications, administration with rifampin reduced the concentration of raltegravir.

Elvitegravir, another integrase inhibitor, is in phase IIb clinical development. Available data suggest that there is cross resistance between these two integrase inhibitors.

Maraviroc, an entry inhibitor, was approved by the FDA in August, 2007 for use in patients with multidrug-resistant CCR5-tropic virus who have evidence of viral replication. Vicriviroc, another CCR5 antagonist is in phase III of development. These drugs are also part of a completely new class of antiretroviral medications. CCR5 antagonists are different from other currently available oral HIV/AIDS antiretroviral drugs, which work by inhibiting HIV replication intracellularly. CCR5 antagonists work at obstructing the entry of HIV into the CD4 cell. Entry of HIV into the host CD4 cell requires binding not only to the CD4 receptor but also to either CCR5 or CXCR4 co-receptors. Blocking of these co-receptors inhibits viral entry into the cell. Maraviroc and vicriviroc, as CCR5 antagonists, only have activity against virus that uses exclusively CCR5 receptors. Virus that exhibit CXCR4 tropism will not be inhibited by these drugs. Therefore, assessing viral tropism prior to use of this class of drugs is a necessary. Presently there is one commercially available tropism assay with a cost of approximately \$2000. The assay will determine if the HIV virus is expressing CCR5 tropism or CXCR4 tropism or a dual or mixed (D/M) tropism. Several studies have been done to determine expected tropism. In treatment-naïve patients, the majority of patients are expected to have CCR5 tropic virus. Nevertheless, even among treatment-naïve patients 12-19% had detectable D/M or CXCR4 virus and these patients are more likely to have lower CD4 cell counts. Patients with more advanced HIV disease would be expected to have much higher rates of CXCR4 tropic virus. In the two major trials leading to the approval of maraviroc – studies of the drug versus placebo in patients with extensive antiretroviral experience – approximately half the patients screened had evidence of D/M or CXCR4 tropic virus and were not eligible for study entry. Therefore, among patients with low CD4 cell counts and multidrug resistant virus it can be expected that maraviroc would be inappropriate for use in about half. Hepatotoxicity has been reported with maraviroc use and may be associated with a systemic allergic reaction. The use of this new medication has not been specifically studied in patients with significant underlying liver disorders including hepatitis B virus or hepatitis C virus infections. Therefore caution should be used in using maraviroc with patients with liver disorders. As is the case with all new antiretroviral agents, maraviroc needs to be given with other active antiretrovirals to maintain antiviral effect. If given with a protease inhibitor (except tipranavir/ritonavir) the dose is 150 mg (1 tab) orally twice daily. If given with tipranavir/ritonavir or nevirapine the dose is 300 mg twice daily.

Etravirine (TMC-125), is a “second generation non-nucleoside reverse transcriptase inhibitor (NNRTI).” This medication is not yet FDA approved. The medication was selected for development for its activity

against wild-type and NNRTI-resistant virus. In contrast to the NNRTIs, nevirapine and efavirenz, etravirine requires multiple NNRTI mutations before a significant loss of susceptibility is observed. Etravirine has been shown to be active even when the NNRTI resistance mutation K103N is present. Therefore, this medication may be useful in patients who harbor virus that developed resistance to efavirenz or nevirapine. The dose going forward for approval is two 100 mg tablets orally twice daily. Etravirine, in clinical studies, has been shown to augment the effect of ritonavir-boosted darunavir in patients with prior NNRTI treatment and is the first NNRTI to show clinical efficacy over 24 weeks, after previous nevirapine or efavirenz failure. The drug was generally well tolerated and safe. Rashes occurring with etravirine were generally early in onset, mild to moderate in severity and lasted less than a week on average. The incidence of rash was less than that cited with efavirenz. There was no mucosal or hepatic involvement or Stevens-Johnson syndrome in patients treated with etravirine. Central nervous system (CNS) toxicity is not expected to be an issue for this agent. Another medication in the second generation NNRTI pipeline is TMC-278. This agent is entering into a large scale clinical study where it will be dosed once daily.

Summary

As highlighted above, these individual agents can be potent additions to the HIV pharmacopoeia. It is essential to recognize that each trial of these agents has shown the importance of having at least two fully active drugs in a new regimen; as combinations of active agents are essential for virologic response and to forestall drug resistance. The ability to have the highly treatment-experienced patients obtain the goal of undetectable levels of virus has been improved by the development of these new medications and medication classes. As with any new medications, familiarization with the package insert prior to prescribing these medications is important.

HIV 101: CHANGES IN THE GUIDELINES FOR THE USE OF ANTIRETROVIRAL AGENTS IN HIV-1-INFECTED ADULTS AND ADOLESCENTS, DECEMBER 2007

Laboratory Assessment	
Drug Resistance	"Genotypic resistance testing should be performed for all treatment-naïve patients entering into care, regardless of whether ARV therapy is to be initiated (AIII). This recommendation is based on the fact that transmitted resistance mutation may be detected at a time point more proximal to the time of infection than later. Repeat testing may be considered at the time when therapy is to be initiated (CIII)."
Tropism Assay	"Tropism testing should be performed prior to the initiation of a CCR5 antagonist, such as maraviroc (AII). Coreceptor tropism testing might also be considered for patients exhibiting virologic failure on maraviroc (or any CCR5 inhibitor) (BIII)."
HLA-B*5701 Testing	HLA-B*5701 testing should be initiated prior to initiating abacavir therapy to reduce the risk of hypersensitivity reaction (AI). HLA-B*5701-positive patients should not be prescribed abacavir (AI), and the positive status should be recorded as an abacavir allergy in the patient's medical record (AII). When HLA-B*5701 testing is not readily available, it remains reasonable to initiate ABC with appropriate clinical counselling and monitoring for any signs of abacavir-associated hypersensitivity reaction (CIII).

When to Initiate ARV Therapy
<p>ARV therapy should be initiated in patients with history of an AIDS defining illness or with a CD4 T-cell count of <350 cells/mm³. The data supporting this recommendation are stronger for those with a CD4 T-cell count <200 cells/mm³ and with a history of AIDS (AI) than for those with CD4 T-cell counts between 200 and 350 cells/mm³ (AII).</p> <p style="padding-left: 40px;">Treatment for the following groups should be initiated regardless of CD4 T-cell count:</p> <ol style="list-style-type: none"> 1. pregnant patients (AI) 2. patients with HIV associated nephropathy (AI) 3. patients co-infected with hepatitis B when treatment for hepatitis B virus is indicated (BIII) <p>The optimal time to initiate therapy in asymptomatic patients with CD4 T-cell count >350 cells/mm³ is not well defined. The decision of whether or not to start therapy in these patients should take into account the potential benefits and risks associated with therapy, comorbidities, and patient readiness and willingness to adhere to long-term treatment.</p>

Management of the Treatment – Experienced Patient
<p>In treatment-experienced patients with suppressed viremia, assess adherence frequently and simplify the regimen as much as possible. Change individual antiretroviral drugs to reduce or manage toxicity, as needed. Adding at least two, and preferably three, fully active agents to an optimized background antiretroviral regimen can provide significant antiretroviral activity (BII).</p> <p>Immunologic failure can be defined as a failure to achieve and maintain an adequate CD4 response despite virologic suppression.</p> <p>For immunologic failure, current medications, untreated coinfection, and serious medical conditions should be assessed. There is no consensus for when and how to treat immunologic failure. Tolerated antiretroviral drugs were used.</p>

Rating Scheme for Recommendations
<p><i>Strength of Recommendation: A=Strong B=Moderate C=Optional D=Should usually not be offered E=Should never be offered</i></p> <p><i>Quality of Evidence for Recommendation: I=At least one randomized trial with clinical results II:Clinical trials with laboratory results III:Expert opinion</i></p>

Source: The US Department of Health and Human Services. Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents. December 2007. Available at <http://aidsinfo.nih.gov/>.

NEWS AND LITERATURE REVIEWS

Immune Status at Presentation to Care Did Not Improve among Antiretroviral-na_{ve} Persons from 1990 to 2006

Researchers at the Johns Hopkins School of Medicine recently completed a longitudinal observational study of patients in primary HIV care in HIV practices operated by the Johns Hopkins HIV service in Maryland. The study included 3,348 antiretroviral-na_{ve} patients, most of whom were black men, and lasted from January 1990 through June 2006. All participants were stratified into one of four groups (1990-1994, 1995-1998, 1999-2002, and 2003-2006), according to their year of enrollment at the clinic. This stratification was used in order to better observe trends in HIV testing and treatment over time. Researchers collected data regarding the amount of time between initial HIV diagnosis and presentation for care for each participant, as well as their CD4+ at the time of their presentation.

After determining the median absolute CD4+ cell count at presentation and the number of days from when the person learned his HIV serostatus to when he presented for care, the research team analyzed the entire sample by sex, race, and HIV transmission risk group (injection drug user [IDU], men who have sex with men [MSM], and heterosexual). Researchers found that the median age of participants increased over time and that transmission risk also changed over the course of the study. The portion of participants with IDU transmission risk decreased over time, while greater heterosexual transmission was reported. Also, the median CD4+ count at presentation decreased over calendar time, meaning that the first strata (1990-1994) had a higher median than the most recent strata (2003-2006). While the CD4+ count decreased over time in heterosexual and IDU HIV transmission subgroups, this was not the case in the MSM transmission subgroup. The MSM subgroup also demonstrated the shortest interval between diagnosis and presentation; this interval decreased over time for white MSM.

The overall trend of lower median CD4+ cell counts at presentation for patients in most transmission subgroups demonstrates that patients in more recent years are presenting for care later in the course of HIV-infection. Earlier identification of HIV-infection can significantly improve the survival benefit of antiretroviral therapy and can reduce morbidity. Furthermore, studies suggest that the initiation of antiretroviral therapy can help reduce the further transmission of HIV, thus reducing the spread of the virus to others. This study only serves to emphasize the importance of implementing the CDC's recommendations for the increased routinization of HIV testing.

Keruly, J et al. Immune Status at presentation to Care Did Not Improve among Antiretroviral-Na_{ve} Persons from 1990 to 2006. Clinical Infectious Diseases. 2007;45:1369-74.

Fed's Care for HIV Detainees Falls Short

The US Department of Homeland Security has failed to provide satisfactory health care to HIV-positive immigrant detainees. A 71-page report, put out by Human Rights Watch, found that the lack of sufficient health care for detainees was putting their health and their lives at risk. The department's guidelines for HIV care failed to meet both the national and international standard of care. The report stated that without internal oversight and accountability to the public, "immigrant detainees with HIV/AIDS will continue to needlessly suffer, and in some cases die in US immigration detention." There were 47 detainees infected with HIV in US Immigration and Customs Enforcement (ICE) facilities through April 2007. According to the report, detainees also are held in other facilities such as local jails and regional centers, where the government does not track the number of people with HIV. When questioned about the Human Rights Watch report, ICE spokeswoman Kelly Nantel said, "ICE provides

excellent care to the detainees in our custody...we spend nearly \$100 million every year on detainee health care." According to Ms. Nantel, approximately one quarter of the 300,000 people that ICE processes each year are diagnosed with chronic health problems, and many only learn about them during their incarceration. The report requests that the government increase the number of facility inspections, revise medical guidelines for detainee care, and improve protection for lesbian, gay, bisexual, transgender, and HIV positive detainees. The report also urges the government to increase access to HIV testing.

Kearney, Christine and Cooney, Peter. "U.S. care for HIV detainees falls short: report". Reuters Online. 7 Dec. 2007.

CD4 Cell Count at Presentation for Clinical Care is Low and Unchanged Since 1990

To examine trends in the time from HIV diagnosis to first presentation for HIV clinical care and initial CD4 cell count, researchers at the Johns Hopkins School of Medicine studied the records of 3,348 patients who were antiretroviral-na_{ve} at the time of presentation to their clinic from January 1990 through June 2006.

The median presenting CD4 cell count was 371 cells/uL during 1990-1994 but fell to 271 cells/uL by 2003-2006. The downward trend in initial CD4 was observed in men and women, whites and blacks, heterosexuals and injection drug users. Only among men who have sex with men was there a reverse trend of increasing CD4 cell count at presentation. There was a decline in the median time from HIV diagnosis to entry into HIV health care during the course of the study period. During 1990-1994, the time from diagnosis to care was 271 days and in 2003-2006 it was 196 days.

The overall trend of lower median CD4+ cell counts at presentation for patients in most transmission subgroups demonstrates that patients in more recent years are presenting for care later in the course of HIV-infection. Earlier identification of HIV-infection can significantly improve the survival benefit of antiretroviral therapy and can reduce morbidity. Furthermore, studies suggest that the initiation of antiretroviral therapy can help reduce the further transmission of HIV, thus reducing the spread of the virus to others. This study only serves, the authors conclude, to emphasize the importance of implementing the CDC's recommendations for the increased routinization of HIV testing.

Keruly, J et al. Immune Status at presentation to Care Did Not Improve among Antiretroviral-Na_{ve} Persons from 1990 to 2006. Clinical Infectious Diseases. 2007;45:1369-74.

Incarceration and Risky Sexual Partnerships in a Southern US City

Although incarceration has often been associated with sexually transmitted infections (STI) and HIV, just how incarceration impacts risky sexual behavior has yet to be determined. To examine the role of personal or partner incarceration on risk behavior researchers from the University of North Carolina identified social venues with high levels of new, multiple, and concurrent sexual partnerships in an urban area in the US South where incarceration and HIV are both endemic. This process of identifying social venues involved interviewing community members about places in the city where people meet new sexual partners. The research team then visited each venue and conducted structured face-to-face interviews with random individuals about their sexual behavior and substance use history.

NEWS AND LITERATURE REVIEWS...

(continued from page 6)

During the interview, each participant was asked if they had multiple partnerships (having at least two new sexual partners in the past 4 weeks) and if they had engaged in transactional sex-- defined as giving or receiving money, goods, or services in exchange for sex-- in the past four weeks. Interviewers also asked male participants if they had been incarcerated for longer than twenty-four hours in the past twelve months and asked women if they had ever been incarcerated for longer than twenty-four hours. In addition, participants were asked if they had had a sexual partner in the past twelve months who had ever been incarcerated for longer than twenty-four hours.

Approximately two-thirds of the 373 participants (144 women and 229 men) were African American, one-third of participants reported unemployment, and a significant portion of the participants had not completed high school. Among men, approximately 21% reported incarceration for longer than twenty-four hours in the past twelve months and 17% had a sexual partner in the past twelve months who had ever been incarcerated. This relationship was similar in women, 29% of whom reported ever being incarcerated for longer than twenty-four hours and 18% had a sexual partner in the past twelve months who had ever been incarcerated.

Men who had been incarcerated in the past twelve months were four times more likely to report transactional sex in the past four weeks than men without recent incarceration history. Women who had ever been incarcerated were three times more likely to have had multiple new sexual partnerships in the past four weeks than women with no incarceration history. Furthermore, adjustment for demographic and socioeconomic confounding variables had little effect on these relationships.

This study supports the previously demonstrated relationships between personal incarceration and risky sexual behavior, as well as findings that incarceration of a recent partner is associated with risky sexual partnerships. Moreover, the observation of a strong association between incarceration history and sexual risk behaviors supports the need for STI/HIV prevention efforts targeting former prisoners and their partners.

Khan, M et al. Incarceration and Risky Sexual partnerships in a Southern US City. *Journal of Urban Health: Bulletin of the New York Academy of Medicine.*

Compiled by Christine Devore

RESOURCES

Department of Health and Human Services 2007 Adult and Adolescent Antiretroviral Treatment Guidelines
<http://aidsinfo.nih.gov/Guidelines/Default.aspx?MenuItem=Guidelines>

National HIV/AIDS Clinician's Consultation Center
Warmline: National HIV Telephone Consultation Services
1-800-933-3413
PEPline: National Clinician's Post-Exposure Prophylaxis Hotline
1-888-448-4911
Perinatal Hotline: National Perinatal HIV Consultation and Referral Services
1-888-448-8765

CDC's Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>

CDC's National HIV Testing Resource Website
<http://www.hivtest.org/>
CDC's Correctional Health Website
<http://www.cdc.gov/correctionalhealth/>

International AIDS Society-USA Panel
2006 Recommendations of the Treatment for Adult HIV Infection
<http://jama.ama-assn.org/cgi/content/full/296/7/827>

Center for Health Justice
<http://healthjustice.net/>

Community HIV/AIDS Mobilization Project
<http://www.champnetwork.org/>

American Correctional Health Services Organization
<http://www.achsa.org/index.cfm>

American Academy of HIV Medicine
<http://www.aahivm.org/>

SELF-ASSESSMENT TEST FOR CONTINUING MEDICAL EDUCATION CREDIT

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of Medical Education Collaborative, Inc. (MEC) and IDCR. MEC is accredited by the ACCME to provide continuing medical education for physicians.

Medical Education Collaborative designates this educational activity for a maximum of 1 AMA PRA Category 1 Credit™. The target audience for this educational program is physicians. Physicians should only claim credit commensurate with the extent of their participation in the activity. Statements of credit will be mailed within 6 to 8 weeks following the program.

Objectives:

- The learner will be able to describe the body shape changes commonly associated with HIV infection and some of the strategies related to treating these changes.
- The learner will be able to discuss the newest antiretroviral medications indicated for the treatment of HIV-1.
- The learner will be able to explain the changes in the The US Department of Health and Human Services newest guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents.

1. According to data from a large cohort of men with and without HIV infection, the undesirable pattern of fat gain during HIV therapy seems to be associated with particular HIV therapies and not so much with HIV therapy-mediated improvements in health.

TRUE OR FALSE

2. Visceral fat accumulation and the increased subcutaneous abdominal fat associated with excess caloric intake have which of the following in common:

- A. Metformin is indicated for the reduction of both types.
- B. Both types respond to aerobic exercise and dietary modification
- C. Both types are an indication of lipodystrophy
- D. Both A and C

3. Compared with visceral fat accumulation, wasting away of the limbs and face:

- A. Is more difficult to treat
- B. Is more common than visceral fat accumulation
- C. Is directly related to the HIV medications stavudine and zidovudine
- D. Both B and C

4. Which of the following is NOT true about Etravirine:

- A. Etravirine is a second generation non-nucleoside reverse transcriptase inhibitor (NNRTI)
- B. In clinical studies etravirine been shown to augment the effect of ritonavir-boosted darunavir in patients with prior NNRTI treatment
- C. Assessing viral co-receptor preference, so called viral tropism, is a necessary step prior to use of etravirine.
- D. There was no mucosal or hepatic involvement or Stevens-Johnson syndrome in patients treated with etravirine.

5. According to the new 2007 DHHS guidelines for the use of antiretroviral agents in HIV-1-infected adolescents and adults, ARV therapy should be initiated in patients with history of an AIDS defining illness or with a CD4 T-cell count of <350 cells/mm3.

TRUE OR FALSE

In order to receive credit, participants must score at least a 70% on the post test and submit it along with the credit application and evaluation form to the address/fax number indicated. Statements of credit will be mailed within 6-8 weeks following the program.

Instructions:

- Applications for credit will be accepted until December 31, 2008.
- Late applications will not be accepted.
- Please anticipate 6-8 weeks to receive your certificate.



Please print clearly as illegible applications will result in a delay.

Name: _____ Profession: _____

License #: _____ State of License: _____

Address: _____

City: _____ State: _____ Zip: _____ Telephone: _____

Please check which credit you are requesting ACCME or Non Physicians

I certify that I participated in IDCR monograph December 2007 Issue

Please fill in the number of actual hours that you attended this activity.

Date of participation: _____

Number of Hours (max. 1): _____

Signature: _____

Please Submit Completed Application to:

Medical Education Collaborative
 651 Corporate Circle, Suite 104, Golden CO 80401
 Phone: 303-420-3252 FAX: 303-420-3259
 For questions regarding the accreditation of this activity, please call 303-420-3252

COURSE EVALUATION

I. Please evaluate this educational activity by checking the appropriate box:

Activity Evaluation					
	<i>Excellent</i>	<i>Very Good</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>
Faculty					
Content					
How well did this activity avoid commercial bias and present content that was fair and balanced?					
What is the likelihood you will change the way you practice based on what you learned in this activity?					
Overall, how would you rate this activity?					

II. Course Objectives

Were the following overall course objectives met? At the conclusion of this presentation, are you able to:

- | | | | |
|--|------------|-----------|-----------------|
| <ul style="list-style-type: none"> ■ The learner will be able to describe the body shape changes commonly associated with HIV infection and some of the strategies related to treating these changes. | YES | NO | SOMEWHAT |
| <ul style="list-style-type: none"> ■ The learner will be able to discuss the newest antiretroviral medications indicated for the treatment of HIV-1. | YES | NO | SOMEWHAT |
| <ul style="list-style-type: none"> ■ The learner will be able to explain the changes in the The US Department of Health and Human Services newest guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. | YES | NO | SOMEWHAT |

III. Additional Questions

a. Suggested topics and/or speakers you would like for future activities.

b. Additional Comments

SAVE THE DATES

American Correctional Association Winter Conference

Grapevine, TX
 January 11-16, 2008
 Visit: <http://www.aca.org/conferences/Winter08/>

Conference on Retroviruses and Opportunistic Infections (CROI)

Boston MA
 February 3 - 6, 2008
 Visit: <http://www.retroconference.org/2008/>

Infectious Diseases: Adult Issues in the Outpatient and Inpatient Settings

Sarasota, FL
 March 10-14, 2008
 Visit: <http://www.ams4cme.com>

2nd Annual Academic and Health Policy Conference on Correctional Health

Boston Marriott, Quincy, MA
 March 27-28, 2008
 Visit: http://www.umassmed.edu/Correctional_Health_Conf/index.aspx

Rapid HIV Testing & Diagnosing Acute HIV Infection

Satellite Videoconference & Webcast
 April 18, 2008
 12:30-2:30 p.m. (ET)
 CME's & Nursing credits, No Fees
 Visit: www.amc.edu/hivconference
 (518) 262-4674
 ybarraj@mail.amc.edu

Updates in Correctional Health Care

San Antonio, TX
 May 17-20, 2008
 Viist: <http://www.ncchc.org/education/index.html>

2008 HIV Prevention Leadership Summit

Detroit, MI
 June 11-14, 2007
 Visit: <http://nmac.org/conferencetrainings/HPLS/>