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Podcast Issue
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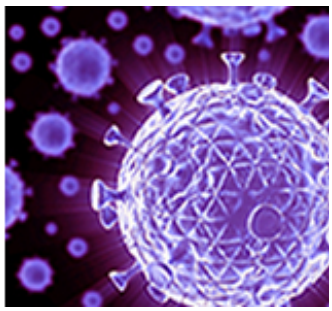

VOLUME 2 — ISSUE 2: TRANSCRIPT

Featured Cases: Women and HIV

Our guest authors are Jean Anderson, MD, Professor of Gynecology and Obstetrics, and Medicine, and Jenell Coleman, MD, Assistant Professor of Gynecology and Obstetrics, and Medicine at the Johns Hopkins University School of Medicine in Baltimore, Maryland.

After participating in this of this activity, the participant will demonstrate the ability to:

- Discuss the management of contraception in HIV-infected women.
- Describe preconception counseling issues for serodiscordant couples.
- Explain the challenges to adherence during pregnancy and the postpartum period.

This discussion, offered as a downloadable audio file and companion transcript, covers the important topic of Women and HIV in the format of case-study scenarios for the clinical practice. This program is a follow up to the Volume 2, Issue 1 *eHIV* newsletter—Women and HIV.

Unlabeled/Unapproved Uses
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Faculty Disclosure
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July 31, 2014

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⇩ PROGRAM BEGINS BELOW

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Length of Activity: 30 minutes

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The target audience (clinicians) for this initiative includes infectious disease (ID) specialists, primary care physicians (PCPs), nurse practitioners (NPs), physician assistants (Pas), and other health care practitioners whose work/practice includes treating patients with HIV.

STATEMENT OF NEED

- As the demographics of HIV have shifted to include many older adults, clinicians require education regarding the treatment of common comorbidities.
- Clinicians may be unclear about issues specific to the diagnosis and treatment of women with HIV.
- Many clinicians require education regarding current treatment and new emerging hepatitis C medications in patients coinfected with HIV/HCV who require antiretroviral therapy.
- Clinicians may need an update on current recommendations for the treatment of HIV with HAART.

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MR. BOB BUSKER: Welcome to this *e*HIV Review Podcast.

Today's program is a follow-up to our newsletter on Women and HIV. With us today are that issue's authors, Dr. Jean Anderson, Professor of Gynecology and Obstetrics and Medicine, and Dr. Jenell Coleman, Assistant Professor of Gynecology and Obstetrics and Medicine, at the Johns Hopkins University School of Medicine in Baltimore.

eHIV Review is jointly presented by the Johns Hopkins University School of Medicine, and the Institute for Johns Hopkins Nursing. This program is supported by educational grants from AbbVie, Merck & Co., Inc., and ViiV Healthcare.

Learning objectives for this audio program include:

- Discuss the management of contraception in HIV-infected women.
- Describe preconception counseling issues for serodiscordant couples.
- Explain the challenges to adherence during pregnancy and the postpartum period.

Both Dr. Anderson and Dr. Coleman have indicated that they have no financial interests or relationships with any commercial entity whose products or services are relevant to the content of their presentation, and that their discussion today will not reference the unlabeled or unapproved uses of any drugs or products.

I'm Bob Busker, managing editor of *e*HIV Review. Dr. Anderson, Dr. Coleman: thank you for joining us today.

DR. JEAN ANDERSON: Well thank you very much, Bob. It's a pleasure to be here.

DR. JENELL COLEMAN: Well thank you very much, Bob. It's a pleasure to be here.

MR. BUSKER: In your newsletter issue, doctors, you reviewed the recent literature describing the special concerns health care providers need to be aware of when treating women with HIV infection. Our focus today is to discuss how some of that information can be applied in the exam room and the clinic. So if you would, Dr. Coleman, start us out by presenting a patient, if you would please.

DR. ANDERSON: A 31 year old woman who has been infected with HIV for five years presents for her routine checkup. She's been taking a once daily tablet of efavirenz and emtricitabine and tenofovir successfully over the past two years. Recently, laboratory tests reveal a CD4 cell count of 700 cells/μL, an HIV RNA level that is less than 20 copies/mL. The patient also has a history of major depression and she is followed by psychiatry. A daily selective serotonin releasing inhibitor was recommended; however, she declined. She regularly visits a therapist and she reports today that her mood is stable.

In terms of her reproductive history, the patient has four living children and had three prior elective terminations. She has been taking injectable depo medroxyprogesterone acetate, or DMPA, for six years and has vaginal spotting occasionally. The patient has a long-term male partner who is HIV positive but also reports one to two casual male sexual partners over the past six months. She uses condoms infrequently. In the past she has received diagnoses of gonorrhea and genital herpes. Her last pap smear two months ago was normal.

The patient has never smoked and denies alcohol or illicit drug use.

MR. BUSKER: Regarding counseling for this patient, Dr. Coleman — what are the key points clinicians should be aware of?

DR. COLEMAN: This case is pretty interesting and represents a typical patient for us. According to the CDC, in 2009 women represented 24% of those living with HIV infection in the United States and accounted for 20% of estimated new infections in 2010. Of note, the majority of these transmissions are attributed to heterosexual contact.

Also among women infected with Women with HIV infection, approximately 80% are of reproductive age, similar to this case. During this routine follow-up visit several important issues should be addressed. First, the clinician should discuss HIV disease management as usual by assessing symptoms, complaints, and adherence to antiretroviral therapy and inquiring about side effects of therapy. Another important issue is to review other medical conditions such as

depression as in this patient and any new symptoms or concerns that the patient may have.

This patient's reproductive history is not uncommon among HIV infected women. Some of the key issues a clinician should consider are to inquire about fertility desires and intentions, review contraceptive options while taking into account the patient's medical history and future fertility desires, and last, have a frank discussion about preventing other STDs.

MR. BUSKER: Dr. Anderson, anything else you'd like to add?

DR. ANDERSON: I would certainly reinforce the last point in this patient. She has some casual sexual partners, she's using condoms infrequently, and has a history of gonorrhea and genital herpes. I think it's important to reinforce, particularly in this age where there is so much publicity about antiretroviral therapy as prevention of transmission of HIV to uninfected partners, that we may be underemphasizing the continued importance of safer sexual practices. It's important for her to understand that simply having an undetectable HIV viral load does not protect her against either acquisition or transmission of other sexually transmitted infections.

MR. BUSKER: For the purposes of this discussion, let's make a few assumptions. Let's assume that this patient is tolerating the antiviral regimen, she's not having side effects, and she actually remembers to take her once-daily tablet every night. How would you recommend as an approach to determining her fertility desires and intentions? Dr. Anderson?

DR. ANDERSON: I think one of the most important things is to ask. Studies have shown that women want to talk about fertility but often it is not brought up by their clinician, and they're afraid of stigma or judgmental attitude. So it's important, first of all, for the clinician to be proactive in asking about what their fertility desires and intentions are. Jenell, what would you add to that?

DR. COLEMAN: Yes, I agree with that. I think also, as in this case, asking about the relationship with the partner, determining whether the current partner is also the father of her children, because, if not, you want to know whether he desires to have children, as this might influence the patient's decision.

Another important thing to consider is the patient's age and prior fecundity, or the ability to have children. Studies show that a woman's best reproductive years are in her twenties, and fertility gradually declines in the thirties, particularly after age 35. So this woman is in her thirties, she's fertile 30, she has about a 20% chance of getting pregnant. So this means that for every 100 fertile 30 year old women trying to get pregnant in one cycle, 20 will be successful and the other 80 will have to try again. By age 40 this declines to less than 5% per cycle. So if the patient desires more children it is definitely important to inquire about all these issues, and also to ask about a timeframe, whether she's thinking about the next year, or is this something she is thinking about five years from now.

MR. BUSKER: Let's make a few more assumptions, again, for the purposes of this discussion. Let's assume the patient does not want any additional children, and that she is due for another contraceptive injection in three weeks. Now my question is this: is it appropriate for the clinician to provide additional counseling about the contraceptive method that she's chosen to use? Or should the clinician simply reorder the DMPA, which is her current choice? Your thoughts, Dr. Coleman?

DR. COLEMAN: Yes, reassessing the contraceptive method at each visit is very important. In the US it is estimated that over half of pregnancies among women infected with Women with HIV infection are unintended, and although most women with Women with HIV infection use contraception, as shown in the Women's Intra-Agency HIV study, or WIHS cohort, the majority of these women rely on condoms. Now condoms are about 85% effective, but that's only if you use them consistently and correctly, and their use also requires negotiation with male partners. So with women it's also important to assess their contraceptive desires at each visit.

Other contraceptive methods that could be discussed include hormonal birth control methods such as oral contraceptives, vaginal rings, the patch, injectables, contraceptive implant, and the intrauterine device. However, it's important to determine if pill burden is an issue with your patient or adherence to medication as some of these hormonal birth control methods will require the patient to think about contraception daily, weekly, monthly, or quarterly. Also, the provider must take into account possible drug-drug interactions

between some hormonal methods, usually the estrogen containing pills and some of the progestins, as well, and whether they interact with the patient's antiretroviral medication. Overall, because of some of these complexities, primary care providers have expressed a lack of knowledge about safe options for women infected with HIV, and as a result they typically counsel and prescribe only a limited subset of contraceptive methods that are available.

In contrast, the contraceptive implant and intrauterine device, which are considered long-acting reversible contraception or LARC, do not require consistent scheduling or constant thinking about contraception. LARC are the most effective reversible methods available, they are covered by most insurance plans, and generally they're regarded as safe for women with Women with HIV infection, but studies show that they are underused. This underuse of LARC is possibly due to suboptimal integration of reproduction health care into HIV care and provider lack of knowledge of their use.

Another important point to consider in this patient is the fact that she has been using DMPA for over six years. Injectable DMPA is a popular contraceptive method because it is discreet, it's injected every three months, it has minimal drug-drug interactions, and it's highly effective. However, providers must also consider other side effects of prolonged DMPA use, which include weight gain, mood changes, and irregular bleeding.

A very important risk of prolonged DMPA that should be mentioned is reduced bone mineral density. DMPA received a black box warning from the FDA in 2004 because of reduced bone mineral density seen in patients who used it for more than two years, although the effect is largely reversible after discontinuation. Coupled with other risk factors associated with reduced bone mineral density in women with HIV infection, such as antiretroviral therapy like tenofovir, possible methadone use, and vitamin D deficiency, providers might want to exercise caution with prolonged DMPA use and reassess its use at each visit. However, there are no data overall to provide guidance, and this is an area of research that should be explored.

In my practice after patients have had two years of continuous DMPA, I have a brief discussion about bone health that includes dietary and lifestyle modification such as increasing calcium and vitamin D intake, increasing weight bearing exercise, and smoking cessation. I also discuss fertility desires and intentions, and unless there are clear contraindications or the patient desires pregnancy, say within the next year, I typically counsel patients about the benefits of LARC, dispel some of the misconceptions, and encourage uptake. Jean, how do you counsel patients about prolonged use of DMPA?

DR. ANDERSON: I counsel them very similarly to you. In this particular case one alternative I would also discuss is the option of permanent sterilization. In a woman who does not want more children, a permanent method rather than a reversible method should be discussed with her. A couple of permanent methods are available to women, including tubal ligation which requires a minor surgical procedure, and Essure, which in many cases can be performed in the office. But it is important to emphasize that those options are permanent. So in counseling, women should be advised about this but they're terrific options for women who have completed child bearing.

DR. COLEMAN: Yes, I agree. Overall, I think the message here is that there are high rates of unintended pregnancy among women with HIV infection, and highly effective contraception such as LARC should be encouraged. Providers often would like to have extra guidance on counseling these women, and it is available online through the CDC's medical eligibility criteria for contraceptive use.[1]

MR. BUSKER: A link to that CDC website can be found in the transcript version of this podcast. Now Dr. Coleman, this patient reported multiple sex partners with inconsistent barrier use. What's the best way to evaluate and mitigate the risk that behavior entails?

DR. COLEMAN: A detailed sexual history should be taken on all patients, and patients should be counseled about primary prevention of STDs. If a woman engages in risky behaviors, especially exchanging sex for money, housing, or drugs, or reports multiple sexual partners, new partners, inconsistent condom use, or substance misuse, a discussion should be had about potential long-term sequelae of untreated cervical infections. This would include ectopic pregnancies, pelvic inflammatory disease, pelvic pain and possibly infertility, and that infections can be prevented by reducing risky behaviors.

As secondary prevention the CDC STD treatment guidelines, which are also available online, recommend that women with HIV infection undergo annual screening for chlamydia, gonorrhea, and trichomoniasis. Many providers routine-screen for chlamydia and gonorrhea; however, trichomoniasis, which is the most common curable STI among women, is often forgotten. Data have shown that trichomoniasis may increase HIV shedding in the female genital tract and potentially increase HIV transmission. So it is important for providers to think about trichomoniasis in addition to chlamydia and gonorrhea.

Another point to consider is that a speculum examination is not necessary to screen for these STIs, as they can be detected from self-collected vaginal swabs, urine sample, or provider-collected vaginal swabs. Screening for trichomoniasis uses a sensitive nucleic acid amplification test that is now available like they are for chlamydia and gonorrhea, and now many laboratories have the capability of testing for all three infectious agents using the same swab.

The last point to introduce is the concept of dual protection for patients. Many women of reproductive age think mostly about birth control, but they may not think about preventing sexually transmitted infection. That means providers should encourage barrier protection or condom use in addition to highly effective forms of birth control.

MR. BUSKER: Thank you both for that case and discussion. And we'll return, with Drs Jean Anderson and Jenell Coleman, in just a moment.

JEANNE KERULY: Hello. I'm Jeanne Keruly, Assistant Professor of Medicine in the Division of Infectious Diseases at the Johns Hopkins University School of Medicine. I'm one of the program directors of *e*HIV Review.

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MR. BUSKER: Welcome back to this eHIV Review podcast. I'm Bob Busker, managing editor of the program. Our guests from the Johns Hopkins University School of Medicine are Dr. Jean Anderson and Dr. Jenell Coleman. And our topic is: HIV and Women.

We've been discussing how some of the new information Drs Anderson and Coleman reviewed in their newsletter issue can be applied in clinical practice. So to continue — Dr. Coleman, let me ask you to bring us another patient, if you would, please.

DR. COLEMAN: A 37 year old woman with a medical history of morbid obesity, hypertension, and HIV presents to discuss the desire for pregnancy. The patient has been infected with HIV for 15 years and has had an undetectable HIV RNA level for at least the past two years. Her antiretroviral regimen includes etravirine, tenofovir and lamivudine, and she has not had an AIDS defining illness. The CD4 cell nadir was 275 and the most recent was 1193.

The patient underwent gastric bypass a year ago and has lost 100 pounds so far. She exercises regularly and follows a strict diet. She takes hydrochlorothiazide to manage hypertension.

The patient has never been pregnant. She was recently married and would like to start a family. Her husband is negative for HIV and is tested every six months. He has fathered two children in a previous relationship and he is present for the discussion. She reports consistent condom use, and she's never had other STDs. The patient smokes two to three cigarettes per day and denies alcohol or illicit drug use.

MR. BUSKER: What do you see as the initial steps in the management of this patient?

DR. COLEMAN: This is an increasingly common scenario. I think one of the first things is to consider the couple's motivation and readiness for pregnancy. One can assess whether the patient and her husband have tried to conceive before, and if so, follow-up questions include if they've conceived with previous partners, as the male partner has, the length of time they've been trying to conceive. Most important,

what is the method with which they have been trying to conceive.

The next step is to take a careful, detailed menstrual and reproductive history. This would include determining whether not the patient appears to have ovulatory menstrual cycles. In other words, to determine if she has a normal regular menstrual period. The menstrual cycle is counted from the first day of one period as day one, to the first day of the next, and it isn't the same for every woman. A normal cycle can occur anywhere from 21 to 35 days and last two to seven days. So it is important to determine what is "normal" for this patient. Jean, is there anything else?

DR. ANDERSON: I think in cases where the focus is on HIV we may forget that additional considerations in trying to conceive relate to medical conditions in the patient or her partner that may affect the safety of pregnancy. In this case, this patient has had bariatric surgery, which may complicate a future pregnancy nutritionally or may be associated with difficulties or problems with fetal growth.

In addition, she's on hydrochlorothiazide, and other drugs to control her hypertension would be considered safer to take in a woman who is pregnant or trying to conceive. These things don't necessarily have anything to do directly with her HIV but would affect the sort of counseling and preconception care she receives.

MR. BUSKER: So let's assume, at least for this discussion, that the patient has a normal menstrual cycle. Dr. Coleman? Where should the discussion go next?

DR. COLEMAN: A normal cycle might suggest that the patient is ovulating regularly and is therefore less likely to have a hormonal imbalance. During the interview, I would then focus on possible anatomic reasons that could impair fertility. This would include asking about a history of chlamydia or pelvic inflammatory disease, as patients with these infections are at higher risk for fallopian tube scarring that can lead to blockage.

However, the provider must not forget to evaluate the male partner. Generally in infertility cases, a third of the time it is due to the woman, a third of the time it's due to the male, and a third is unexplained. So it is important to include the male partner's medical and sexual history as well, since he is an equal partner.

MR. BUSKER: What would you tell this couple about their options for safer conception? What does the evidence say?

DR. COLEMAN: Two landmark studies inform safer conception. First, there was the ACPNO52 that was published in the *New England Journal of Medicine,* which looked at HIV serodiscordant couples where one partner had HIV infection and the other did not. It showed that starting treatment early in the patients infected with HIV decreased the likelihood of transmitting HIV. The second study is the PARTNERS PrEP Study, also published in the *New England Journal of Medicine*. This study was also among serodiscordant couples, but the partner infected with HIV was not on antiretroviral therapy and the partner without infection used preexposure prophylaxis, or PrEP. This study also showed a decrease in HIV transmission.

So together, these studies show that horizontal transmission is decreased with antiretroviral therapy use either as treatment for the partner with HIV or used as prophylaxis in the partner without HIV infection. In this case presentation, the woman has HIV infection and the man is negative for HIV. Before attempting to conceive, of course, she should adhere to her antiretroviral therapy regimen and have an undetectable plasma viral load. Adding PrEP to the tools for the male partner without HIV should be discussed; however, modeling studies show limited benefit for PrEP if the partner with HIV infection is on HAART and has complete viral suppression.

Overall, both partners should be screened for sexually transmitted infections and a frank discussion about monogamy should be undertaken. Monogamy cannot be assumed, and providers need to know whether other sexual partners are involved.

Some simple, low cost options for providers to discuss include timed intercourse. The important point here is for providers to educate couples to have sexual intercourse during the most fertile time of the month. The goal is to have sperm present in the female genital tract before ovulation. Sperm can survive up to five days in the female reproductive tract; however, an ovulated egg can last only 12 to 24 hours, so if intercourse occurs after ovulation, it is unlikely to lead to conception.

Jean, how do you counsel your patients about timed intercourse?

DR. ANDERSON: I tell them what you've just said, but I try to give them some tools for being able to identify the appropriate time. Women who have very regular periods can use their own menstrual calendar and try to determine the best time to try to conceive. There are also some online resources where they can plug in the dates of their last period and how many days their cycles usually are and be able to determine the time when they are most fertile. Finally, there are over-the-counter ovulation predictors to help determine the most appropriate time to try to conceive.

DR. COLEMAN: Another thing I would like to add is a discussion about home insemination for the couple, whereas during the most fertile time during the menstrual cycle they can use needle-less syringe or these menstrual cups to collect the sperm and deposit into the female genital tract. Or another option is just during the most fertile period, to not use condoms at all if intimacy and home insemination feels like it's not intimate enough.

MR. BUSKER: Is there anything else — additional testing, other management interventions — that the clinician should do before referring this couple to gynecology?

DR. COLEMAN: Another important issue is to address the current antiretroviral regimen that the woman is taking and to assess the safety during the first trimester of pregnancy. Although this patient is not taking efavirenz, if she were, it is recommended that the providers switch to another regimen before the patient conceives.

However, Jean, you know more about that as you stood on the perinatal guidelines committee. What do you think?

DR. ANDERSON: The perinatal guidelines are updated on a regular basis.[2] They are housed at the AIDS Info website which houses all of the US Public Health Service guidelines related to HIV, and there is a special section in the guidelines addressing issues related to preconception, counseling, care, and use of antiretroviral agents. I would refer providers to this website, as this data is constantly evolving, but I believe that as Jenell said, currently efavirenz is the primary drug for which there has been significant concern about teratogenicity and is certainly not recommended for someone who is trying to conceive.

I might also mention that the CDC, just within the last month or two, has issued new guidelines for the use of preexposure prophylaxis. The guidelines mention that PrEP should be discussed with heterosexually active women and men whose partners are known to have HIV infection such as serodiscordant couples, as one of several options to protect the uninfected partner during conception and pregnancy. There is much more detail in these guidelines about the use of PrEP.[3]

MR. BUSKER: I want to thank our guests for this patient and this discussion and let our listeners know that a link to that CDC site for HIV, AIDS, and PrEP guidelines can be found in the transcript version of this podcast. We've got time now for one more patient, so if you would, Dr. Anderson —

DR. ANDERSON: A 38 year old woman presents for her initial prenatal visit at 17 weeks of gestation. She received a diagnosis of HIV in 2001 after immigrating from Zambia. She works as a nurse and is married. Her husband is negative for HIV. She has a history of two miscarriages and conceived this pregnancy with ovulation induction and intrauterine insemination. She is on a regimen consisting of nevirapine, tenofovir, and zidovudine coformulated with lamivudine and has been on this regimen since starting ART in 2003.

Her most recent CD4 count six months before this visit was 671 cells/μL, and her HIV RNA level was less than 20 copies/mL. She reports a history of perfect adherence. Her initial prenatal labs showed a CD4 count of 461 cells μL and an HIV RNA level of 139,000 copies/mL.

MR. BUSKER: Based on what you've just told us, what additional information would you want to obtain to most effectively counsel this woman about her pregnancy?

DR. ANDERSON: I think the first issue is to readdress her adherence. This has to be asked about in a nonjudgmental way, acknowledge that it's not uncommon to miss occasional doses, and how difficult it is to take doses on a regular day of any medication. The way I like to ask it is: how many doses do you miss in any average week? That gives her permission to be frank with me and it's nonjudgmental.

I then also ask about any other medication she's on. There might be potential drug interactions which could lessen her antiretroviral drug levels and possibly result in elevation of HIV viral load. In pregnancy, particularly in early pregnancy, I ask about other things that may result in intolerance or interfere with absorption of these drugs, such as nausea and vomiting in early pregnancy. I talk about the need to take some antiretrovirals with food and assess if she is doing that. Finally, I always obtain genotypic resistance testing while she's on the current medications. This is recommended for all pregnant women who have a detectable viral load when they become pregnant, whether they're on antiretrovirals or not. This would be particularly important in this case, where you want to rule out the possibility of resistance.

MR. BUSKER: Barriers to adherence during and after pregnancy — what are some of the most commonly encountered?

DR. ANDERSON: I think one of the common barriers is concern about the safety of medications in pregnancy by either or both the patient and the provider, and they may decide to interrupt therapy in early pregnancy because of these concerns. Many pregnant women first receive the diagnosis of HIV during pregnancy. That puts them in the position of having to start medication somewhat urgently to prevent perinatal transmission, yet they have not yet accepted this diagnosis and really haven't had time to ensure good readiness to start lifelong therapy.

Many women are concerned about stigma and lack of disclosure, and regimens that require them to take medication at a certain time of day may cause them concerns if they are at work or around family members to whom they have not disclosed. I already mentioned the issue of nausea and vomiting in early pregnancy may affect absorption of these drugs, and other side effects associated with pregnancy may add to the side effects of antiretroviral agents.

And then finally, in the postpartum period, postpartum depression or simply the stress associated with caring for a new baby may be significant barriers to good adherence.

Jenell, do you have anything to add about barriers to adherence?

DR. COLEMAN: I agree with what you said. I think another thing we should screen for is depression or other psychiatric illnesses during the pregnancy, as in the nonpregnant population depression or psychiatric illnesses have been shown to lead to poor adherence. So it's important that we remember that each patient may undergo changes in pregnancy and to assess her mood at this different visit.

MR. BUSKER: Dr. Anderson, let me ask you — poor adherence during the pregnancy — what are the implications?

DR. ANDERSON: I think the implications are, first of all, the same as for women who are not pregnant and other individuals with HIV infection. There's an increased risk of virologic and ultimately clinical failure of these drugs to control HIV. There is an increased risk of drug resistance. I think there is also an increased risk of transmission to a sexual partner without infection, and there may be increased risk of transmission to a fetus.

MR. BUSKER: I think that one of the most important questions I need to ask is: what actions can you, as a clinician, do to facilitate adherence during pregnancy?

DR. ANDERSON: It's important to educate women about the importance of adherence in general and the additional considerations in pregnancy. Disclosure should be assessed and issues or concerns about it should be addressed. I offer to assist with disclosure if needed. It should be emphasized to pregnant women and to their providers that you don't want to interrupt antiretroviral therapy in pregnancy, even early pregnancy, unless there is severe hyperemesis unresponsive to antinausea drugs or other severe or life threatening toxicity or severe illness that precludes oral intake.

It's important, if possible, to use regimens that have a low pill burden and convenient dosing, and to assess and address other barriers specifically. Jenell, what would you add to this?

DR. COLEMAN: Yes, I think it's very important to have a multidisciplinary approach to the care of pregnant women with HIV. This includes wraparound services that are provided by your case managers, your peer counselors, social workers, that can help the patient maintain adherence during the pregnancy.

MR. BUSKER: I want to thank both our guests for sharing their insights with us today. And I'd like to wrap things up by reviewing the key points of today's discussion in light of our learning objectives. So to begin: the management of contraception in HIV infected women. Dr. Coleman?

DR. COLEMAN: Long-acting reversible contraceptive methods in women with HIV infection are safe and highly effective tools that should be encouraged in the HIV positive population. We also discussed potential adverse effects of prolonged injectable DMPA on bone health in women who have HIV infection and may take other medications that adversely affect bone. And we also talked about potential drug-drug interactions between some contraceptives and antiretroviral therapy.

MR. BUSKER: And our second objective: counseling for preconception, and conception options for serodiscordant couples. Dr. Anderson?

DR. ANDERSON: We discussed the importance of assessing and controlling any comorbid conditions in addition to managing the HIV infection. We also discussed options for safer conception, including antiretroviral drugs with treatment as prevention, as well as preexposure prophylaxis for the partner without infection as well as other potential options for safer conception. And finally, we talked about approaching couples to encourage monogamy and other ways to decrease risk of transmission, including safer sexual practices.

MR. BUSKER: And finally: the challenges to adherence during pregnancy as well as during the postpartum period. Dr. Coleman?

DR. COLEMAN: We reviewed barriers to adherence during and after pregnancy, the implications of poor adherence in pregnancy, and factors that help facilitate good adherence.

MR. BUSKER: Dr. Jean Anderson and Dr. Jenell Coleman from the Johns Hopkins School of Medicine, thank you for participating in this *e*HIV Review Podcast.

DR. COLEMAN: Thank you, I truly enjoyed the discussion.

DR. ANDERSON: Thank you, Bob, I really had a great time.

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