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PRIMARY CARE FOR ADULTS WITH HIV

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[video transcript]

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Dr. Mary Dyer received her BA in Engineering Physics from the Stevens Institute of Technology in 1986, her MD from New York Medical College in 1996, and her internship and residency for Mid-Hudson Family Practice Residency Program in Kingston, New York in 1999. Dr. Dyer has worked in private practices as a family practitioner in the Hudson Valley from 1999 to 2014. Since 2014, she has worked at Sun River Healthcare, and has been Medical Director of Substance Use Disorders there since 2020. At Sun River, she works in HIV care, Hepatitis C, and medication assisted treatment. Dr. Dyer is also currently one of the lead authors of the New York State AIDS Institute Clinical Guidelines Program guideline, "Comprehensive Primary Care for Adults with HIV," which was updated in February of 2021. So thanks so much, Dr. Dyer, for helping create this course with CEI and presenting today, and I'll let you take it over from here.

01:07
My pleasure, thank you. I have no disclosures. The learning objectives for today are to review the updated guidelines for primary care of people living with HIV, published by the New York State Department of Health AIDS Institute. To discuss the difference between primary care needs of people living with HIV, as compared to the general population. And to identify risk factors for conditions that can affect the health of people living with HIV and preventative measures.

01:41
So good afternoon, everybody. Thanks for coming to my talk. And thank you CEI for having me. As mentioned, I'm a family practitioner who has a small patient panel of people living with HIV. For people living with HIV, there's great news, the life expectancy gap between those with HIV and those without is getting narrower and narrower. And for those who start HIV treatment when CD4 counts are over 500, their life expectancy is practically the same as those without HIV. The not so good news is that people with HIV have significantly more years of living with a chronic condition, such as chronic kidney disease or chronic lung disease. The great news for you as a provider is that in doing primary care for adults with HIV, you have so many wonderful resources to turn to, to get your questions answered. CEI, for instance, has preceptorships and clinical tools, as well as lots of lectures live and recorded. UCSF has a national clinical consultation center, and you can usually get a call back the same day from an expert in HIV care. There are also experts in Hep C and substance use disorder there as well to ask, they're very open and honest and are very helpful with questions. And approachable, that is. And then there is the New York State Department of Health AIDS Institute Clinical Guidelines Program. And you can follow this link to see our guidelines which cover not just primary care, but ART, STIs, Hep C and more.

03:31
I remember when HIV care was done mainly by specialists, and for good reason. HIV medication regimens were extremely complicated, and specialists had to have a very good grasp of antiretrovirals along with knowledge of the prevention and treatment of opportunistic

infections. In those days, it was more about survival. But ever since the introduction of newer, better, less toxic antiretroviral therapy, which is also more accessible and easier to take, people with HIV are living longer lives. And as people are living longer, they obviously are more likely to develop chronic conditions and also need preventative care, which is what primary care providers are so good at.

04:15
So let's first consider the case of a 25 year old cis man, we will call him Ray. Ray is seen for his very first visit, and he was referred to you by a colleague because you know something about HIV care. He's newly diagnosed with HIV and has a viral load of 20,000. And his CD4 cell count is 560. So next, I have a poll question for you. So when should we start antiretrovirals in this person? A) right away, B) when the CD4 cell count drops below 500, C) when the CD4 cell count drops below 250, or D) when the patient develops an opportunistic infection. What do we think? Okay, yes, good. Excellent. Alright, the answer is right away, and that is because of what we know from large randomized controlled trials, like the SMART trial. The benefit of starting treatment right away clearly shows improved outcomes, like a near normal life expectancy. But up to about 12 years ago, I think medication was reserved until the CD4 cell count started to drop. And this was mainly because of the side effects and toxicity of the medication regimens, as well as trouble with accessing it. But today's antiretrovirals are highly effective, more accessible, less toxic, and with less side effects, and are clearly beneficial. So there's no reason not to start right away.

05:54
So back to this 25 year old gentleman, Ray. Let's say he's this amazing human being who doesn't smoke, drink or use drugs, he exercises, he follows this wonderful diet. So we can counsel that person that if he is adherent to his HIV medication, he can expect to have a lifespan that is normal. And the gap in lifespan is narrowing to, the latest models show, about a year or maybe even just months for people who start treatment when CD4 cell counts are over 500. So it totally makes sense that he could engage with a primary care provider who could manage his HIV treatment along with primary care needs.

06:36
Okay, and let's contrast that with a different case. This is a different patient, her name is Jean. And you are the primary care provider for a 65 year old trans female diagnosed with HIV 30 years ago. She has been on various HIV regimens in the past years, and her CD4 nadir is 50. CD4 nadir is the lowest lifetime CD4 cell count, and 50 is pretty low. The initial viral load is 50,000. She was treated years ago for PJP. This used to be called PCP, but is now PJP pneumocystis jirovecii, pneumonia, I probably said that wrong. Also treated for Hepatitis C and cured. She has chronic Hep B. And she is adherent to her HIV meds and is undetectable with a current CD4 cell count of 300. She's a one pack a day smoker, has hypertension, and pre-diabetes. So her history so far is pretty complicated. So let's take a breath. You are the primary care provider for her. What does that mean? What is your job as a primary care provider? What are the goals of a primary care provider for their patient? And this is kind of my opinion, but I think primary care providers should always have on their mind, how do I best protect this patient? We have to think about what this patient might be at risk for and how to mitigate that

risk, and that means looking at their past, their present, and trying to predict their future. So what do I think is relevant in this patient's past? Well, her CD4 nadir is 50. And CD4 nadir, as I mentioned, is the lowest lifetime CD4 cell count. And many patients don't know that information, but it can be really helpful to know. A CD4 nadir under 200 reflects a longer time of viral replication before treatment started, and it correlates with immune dysfunction.

08:43
In studies, CD4 nadir under 200 is correlated with a shorter lifespan and a risk of various health conditions including neurocognitive disorders like dementia, malignancies, cardiovascular disease, etc. And we'll review more of that soon. But you also know that she was treated for PJP, which is an opportunistic infection. So her immune system was once under severe attack, and probably has some battle scars still. In obtaining her past history, you may be able to get a list of medications she's been treated with. Many older medications have toxicities and side effects that might be useful to know. You don't have to memorize all the old meds, thank goodness, but let's say she had been on DDI, that is didanosine. And that caused neuropathy that she still currently lives with. Did the DDI also contribute to lipodystrophy and insulin resistance? And what I mean by lipodystrophy is fat distribution in the body, the body type of thin arms and legs with a round trunk and visceral fat. And older meds like DDI and d4T, which is Stavudine, cause side effects like this which can lead to diabetes, hypertension, arterial sclerosis, etc. And I have to admit that medications are my Achilles heel, so bear with me. Or maybe the patient tells you that she was on the older version of Tenofovir for years. And Tenofovir is a widely prescribed antiretroviral, it's very good, but the older version is TDF. The newer version is T A F or TAF. TDF was and still is widely prescribed, although most are switching to TAF. TDF has been linked to a reduction in bone density while the newer version has less of an impact on bone density. And these are all things to consider when you're getting a past history.

10:45
It's also relevant that she has a history of Hepatitis B, and this will give her a higher risk of hepatocellular carcinoma just based on this. But if she also has cirrhosis, the risk is even higher. So if she has cirrhosis, she should have surveillance with hepatic ultrasounds and alpha-fetoprotein measurements every six months. She should have an upper endoscopy to look for esophageal varices every year or two. So the big picture, she's got lots of risks. And because her CD4 nadir is under 200, your index of suspicion has to be lowered for complications. And just like everyone else, she has preventative health needs, but you as the primary care provider are well positioned to protect her as best you can from what comes.

11:35
So as mentioned before, there is evidence that comorbid conditions occur with greater frequency and at earlier ages in people living with HIV. Some of these conditions, as I mentioned, could have been hastened along by the medications for HIV that were once prescribed. Some are felt to be related to the inflammation that the HIV virus itself causes. And some have to do with shared risks. For example, Hepatitis C and HIV can both be acquired by IV drug use. So I've broken those conditions into categories. The metabolic disorders include diseases like dyslipidemia, osteoporosis, chronic kidney and liver disease, lipodystrophy, insulin

resistance which can lead to diabetes, cardiovascular disease. And then malignancies are more common. Both AIDS defining, like Kaposi sarcoma and non-Hodgkins lymphoma. And HIV related cancers are more frequent, like lung cancer and Epstein Barr related lymphoma. HPV related cancers are more frequent, anal, cervical, head and neck. And hepatocellular carcinoma is more frequent as well. And then infectious diseases such as fungal diseases, tuberculosis, Hepatitis, and syphilis. COPD is more common and at a younger age. Depression is more common. Neurocognitive disorders like dementia, especially with a low CD4 nadir. And frailty. Frailty can be defined as a clinical state in which there is an increase in an individual's vulnerability to developing negative health related events, such as hospitalization or institutionalization. So the bottom line, in taking care of an adult living with HIV, your index of suspicion regarding certain conditions should be lowered a little, especially if they had a CD4 nadir under 200 or a history of an opportunistic infection.

13:44
And here are some excerpts from our guideline. The standard approach to primary care is the same for patients with or without HIV, regardless of who delivers the care. So that means if you're a primary care doctor or provider or a specialist, the primary care approach should be the same. The primary care should address all those things that you're used to addressing, such as routine cancer screening, primary and secondary prevention screening for example osteoporosis, routine and HIV specific immunizations, which we'll look at a little bit later. Substance use, mental health disorders, sexual health, trauma assessment, geriatric care, encouragement of a healthy lifestyle, and preconception counseling, we'll talk a little bit more about that too.

14:38
Clinicians should inform patients of the benefits of ART and strongly encourage patients to initiate ART as soon as possible. Providers should encourage patients regarding adherence to ART to maintain viral suppression. Adherence is the name of the game here. Viral load suppression is the goal and do what you can to whittle away at any barriers to adherence and work with the patient toward viral load suppression. Providers should monitor for potential long term effects of HIV and ART, such as bone density changes, and that's primarily with Tenofovir. Dyslipidemia and weight gain, and those can occur with almost all the agents. And renal dysfunction, that's also mainly Tenofovir as well. Providers should know about opportunistic infection prophylaxis. And that being said, I almost always call an ID friend when I begin or start OI prophylaxis. Providers should have a high index of suspicion and expect to manage comorbidities that occur more often and at younger ages in people with HIV. Conditions mentioned before, like heart disease, cancer, kidney and liver disease, COPD, neurocognitive dysfunction, depression, and frailty.

16:01
More goals of primary care for adults with HIV. Ongoing surveillance for diseases transmitted through the same routes as HIV, including Hepatitis C virus, Hepatitis B virus, HPV and other sexually transmitted infections. Screening and treatment for substance use including tobacco use. And ongoing discussion and patient education recording disclosure of HIV status,

principles of undetectable equals untransmittable, U equals U, pre and post exposure prophylaxis, PrEP and PEP, for their sex partners, and harm reduction strategies.

16:40
So a word about U equals U. So this is how you should counsel individuals, people who keep their HIV viral load at an undetectable level by consistently taking HIV medications will not pass HIV to others through sex. This is a very empowering message to give to people. It helps reduce stigma and encourages them to stay on treatment. So stigma, a few words here about stigma. Internalized stigma is manifested in feelings about yourself. And externalized stigma is stigma as enacted by others. And it can influence how often a patient seeks care, their engagement in care, and whether they maintain their viral suppression. Education and speaking openly about stigma are the best ways to bust up the stigma. It can be the little things, for example, providers should learn to use first person language, say a person with HIV as opposed to an HIV positive person. In the same way that we say people who use drugs, instead of saying addict. We call them people who use drugs. We try not to refer to people as dirty or clean, but rather sober or in recovery. And as I said, giving them the information on U equals U can go a long way towards busting internalized stigma.

18:04
So case management is a part of the team of care providers. The goal of comprehensive case management is to improve patient outcomes and retention in care by providing the support and resources of a health care team. That includes the clinical care provider. And on a personal note, I would be lost without our case managers, you probably feel the same. Peers too are an invaluable part of the caregiving team, peer support can provide an individual with emotional and practical guidance from a person with shared life experience and can be a tool to reduce stigma.

18:45
So here's another question for you. Adults living with HIV have the following diseases at higher frequency and at a younger age compared to the general population. So chronic kidney disease, chronic liver disease, A and B, or none of the above?

19:10
So A and B, yes, both of those are true. Yeah, and liver and kidney disease and a whole host of other conditions, as we mentioned before, like heart disease, cancer, osteoporosis, COPD.

19:27
Okay, and next we'll talk about elements of the history and physical which are important for people living with HIV. So first on the list is history around the HIV itself. You might want to know the circumstances of their diagnosis, their risk factor for acquiring HIV. It's not always necessary to know if they don't feel comfortable sharing, but it can help to understand what other shared risks they might have. For example, if a male is engaging in sex with other men, you can counsel on other risks. ART, as we mentioned in this case before, could there have been some effect on bone density or metabolic syndrome or neuropathy from an older agent? Viral load, you might like to know at the time of diagnosis and even more importantly, has it been

suppressed? CD4 information on the nadir, if you can get it, is very helpful in assessing risk for comorbid conditions. And AIDS defining conditions like Kaposi sarcoma gives you an idea that degree of immune dysfunction. As well as opportunistic infections like PJP, MAC, Cryptococcus, they also give an idea of the degree of immune dysfunction. And this is all the same information you would get from every patient on the planet basically, you know, medications, allergies, past medical conditions, etc, etc. This is no different. We do ask for information on sleep, some antiretrovirals will mess with sleep. Like I think Efavirenz is a classic one that does. Nutrition is important. Frailty, and that kind of means how vulnerable are they? Like say they got a cold, what's the likelihood that a cold that pretty much everyone would just shake off after a week, what's the likelihood that that person might get pneumonia from that, end up in the hospital, and then in a nursing home? That's kind of what we mean by frailty.

21:50
Travel, pets. And then we ask for information on gender identity and sexual orientation. And those are two separate things. Gender identity is who you are, and it's useful in as much as you can learn how to respectfully address that person with the correct pronouns. And sexual orientation is more about who do you love, who do you have sex with. It is helpful to ask about the type of sex a person is having and the parts of anatomy used for sex, as well about the anatomy of their partner's. Gender transition, are they taking hormone therapy, did they have surgery? And an inventory of sexual organs, and this information is useful in deciding what screenings are necessary. And here's a link to a great resource for how to take a sexual history and I always learn something new when I reread this. We ask about housing which is a huge problem among all people, family and other significant relationships and responsibilities, interpersonal and social support network. We talk about chosen family when our regular family isn't supportive. Employment, medical insurance. Incarceration, that can be traumatizing to a patient, also medical care may have lapsed during a period of incarceration. And end of life planning. We ask about a history of mental illness, depression occurs more frequently in people living with HIV. We ask about trauma, many patients with HIV will give a history of significant trauma, placing them at risk for mental illness and substance use disorders and stress. I don't really know anything about stress though, so I'm not gonna talk about that.

23:39
And we ask about substance use. Alcohol, smoking, vaping, all the things you ask everyone else. Use of non prescription drugs and misuse of prescribed drugs. There are lots of screening tools out there for askinh, if you look around. And if you have a comfort level treating substance use, go right ahead and treat. I'm very, very big into harm reduction, and meeting the patient where they're at. And I'm going to put a plug in for buprenorphine prescribing. Do not fear the X waiver. Buprenorphine is such an amazing tool and helps people regain so much of their lives back. And treating people with HIV who have opioid use disorder as well, with buprenorphine, helps keep them engaged in care and virally suppressed. And I think there is a common misconception out there that patients who are being treated with buprenorphine have to be completely abstinent of drugs in order to be successfully treated, you know all drugs that is, so if you don't reach abstinence you should kick them out of the program, but I think the goal is really keeping them safe, as opposed to keeping them abstinent. Safe from overdose and safe from infections and other risks. We ask about sexual health, sex partners, or sex partner, and activity,

what anatomy is being used for sex, sexually transmitted infections, reproductive history, reproductive goals. Do they want to have children, and if so, what stands in their way?

25:22
So we're gonna talk about our cases some more. So back to Ray, he is 25, recently diagnosed with HIV. And together, you decide to initiate treatment for HIV right away. And you gather a comprehensive family and social history, including a sexual history. And he informs you that he engages in condomless sex with men, and says that 'if my mother ever found out she would never speak to me again.' He has a history of depression, diagnosed and treated from age 16 to 19 with medication. Never hospitalized, no history of suicide attempt. But he did feel stigmatized at the time by his provider when he revealed his sexual preference for men.

26:04
So first, a few words about partner notification. So when a new case of HIV is found, it is reported to the New York State Department of Health. And the Department of Health is a very helpful ally in identifying recent partners and helping to notify them, and it can be done anonymously, so that the partner or partners know to get tested. But you will want to educate this patient about U equals U and about STIs that he may be at risk for. You want to get a history about what kind of sex he is having. And you can say, you know, 'I'm not being nosy, I just want to keep you safe.' So let's say for example, he tells you he has receptive and insertive anal sex and oral sex. So you want to do what's called three site testing. And forgive me if you're all familiar with this, but three site testing means there's a swab for gonorrhea and chlamydia and you use them at the sites of exposure. And for this particular patient, you would swab his throat as he's having oral sex, you can either do anal swab yourself or you can provide the patient with a swab and let him do it himself. And thirdly, we'll check the urine for urethral gonorrhea and chlamydia. So he would also be at risk for syphilis and Hepatitis, you'd want to test those accordingly. If he needs it, if he's not immune, you would vaccinate for Hepatitis A and B. And if he hasn't had the HPV vaccine yet, you wouldn't want to vaccinate him for HPV. And we'll go over the vaccines later. But for completeness, you would want to vaccinate him for meningitis serotype non B like Menactra, we want to vaccinate him for pneumonia, for flu and for COVID. So what else do we know? From this conversation, he has a history of depression, which has a recurrence rate of 50% for all people. Once you have one episode of major depression, you are likely to have another, 50%. So you may like to screen him for depression more often. We also know he feels he has to hide this from his mother, and this might be a barrier to medication adherence if say he's afraid his mother would find his bottle of ARV. It's also a good opportunity to discuss confidentiality and HIPAA.

28:37
Okay, and then let's talk about Jean again. So she is our 65 year old transgender female. She's living with HIV for 30 years. You are reviewing her history and her previous test results with her and you see that her bone density reveals osteoporosis, and you notice that she's on a TDF containing regimen, which might be a factor contributing to her osteoporosis. So what do you want to think about before changing her ARVs? Full disclosure, like I said, the medications can be my Achilles heel, so I would probably talk to a colleague with more experience in treating HIV before I switched her, just to be sure I didn't forget anything. But here are some thoughts I have.

So for Jean, the TDF is probably not the best choice for her right now since it's most likely contributing to her waning bone density. And remember that she has a history of Hepatitis B. So she should currently be on a regimen that not only treats HIV but also treats Hep B. And that is usually a regimen that contains Tenofovir with Lamivudine or Tenofovir with Emtricitabine. And when you switch, you have to take care to find regimen that still treats both HIV and Hep B. There have been a few cases where therapy was switched to an HIV regimen that didn't treat Hep B as well, in a person with chronic Hep B, and the Hep B reactivated and the person decompensated quickly. What else to think about? So, since she's been on so many other drugs in the past 30 years, she may have developed some resistance to some of them. So there may be some past resistance testing in her file that you can look at to help with guidance. Personally, I would probably call the consultants at UCSF to go over the case or ask an ID colleague to review it with me, if she has a lot of resistance on previous testing. Thirdly, think about drug drug interactions. Common drugs that have interactions with common ARVs are statins. Steroid inhalers, believe it or not, steroid nasal sprays, even though you think of them as local, some of the ARVs can increase the levels of these steroid inhalers to systemic. So you want to know about that. And proton pump inhibitors

31:17
And that's why we have this, the Liverpool Interaction Checker. You can plug in your ARV right over here in the HIV drug section, and then you put in the medication that you want to prescribe over here. And then you hit enter and up pops up your drug interactions over here and it sort of explains what the interaction is, there's a red, a yellow and a green for how severe is this interaction and what you need to know about it.

31:52
And here is another case, Samantha. Samantha is a 28 year old cis female, she's been diagnosed with HIV five years ago. She's adherent to a single tablet regimen and is undetectable. She is generally in good health. She is monogamous with a serodiscordant partner. So a partner who does not have HIV. Her partner wants to start a family. She loves the idea of having children, but is terrified that the baby will be born with HIV. So how should you counsel her? I would encourage her that if she wants to start a family together, she should by all means try to conceive. Though you can tell her that the risk of transmitting HIV to her baby is less than 1% if she continues to take her ARV throughout pregnancy, labor and delivery, and when they give medication to the infant for four to six weeks after childbirth. She can expect a vaginal delivery if all else goes accordingly, you know, there's no other reason to do a C section. And you will want to look up or ask an expert for the latest guidance on ARV that is safest during pregnancy, you possibly might want to switch, you possibly don't want to switch. But if you do switch, check that viral load again in a month to make sure that the new ARV is keeping the viral load suppressed. Oh, one more thing. And you might want to counsel her that breastfeeding is not recommended at this time for moms with HIV. But absolutely the data is very strong to support people who want to conceive, so go ahead and conceive as long as they take their meds. And let's think about the opposite situation, say that Samantha is your patient who does not have HIV but her male partner does, and they want to have a family and her partner is undetectable. She should absolutely be encouraged to go ahead and start that family.

33:57
And laboratory testing. So this chart is right from our Clinical Guidelines and across the top is I, A, and N. That means I is the initial visit. So this is when should you test a viral load, at the initial visit, annually, and also N is as needed. So I won't go through, I won't read everything from the table, I promise, but basically the viral load is about every four to six months if stable. If unstable or starting a new treatment, you want to check more frequently. The CD4 cell count is about every three months, if you're starting treatment or if the patient still has a viral load. And if stable, it could be like once a year or even less frequently because once a person is stable, it shouldn't really change that much and fluctuations are not very significant. Resistance testing, a genotypic resistance testing or GenoSure PRIme testing, you do this at the initiation of treatment when they still have a viral load. It won't run if the viral load is too low, it can't pick up the resistance, so you want to do it at the initiation of treatment to see what's up.

35:20
You'll also do that if you suspect treatment failure, if the viral load is over 500. Resistance testing can be a little complicated and never a bad idea to ask an expert if you need guidance on resistance testing, but you can do it yourself. And then G6PD in case you have to use Dapsone, and that's one of the meds used for opportunistic infection prophylaxis with very low CD4. The CBC is generally as usual, that you're used to using it as. GFR basically the same, a little more frequently if you're using TDF. Hepatic function, as usual, more if the person has a history of liver disease. And then you know, I think I forgot to put a slide in here on glucose, which is obviously something you would want initially and at least annually, depending on the risk factors. And then we have TB screening, we like to get that at the initial visit. And more frequently, if there is a risk. For example, you know, risks would be unstable housing or incarceration, travel or immigration. And then Hepatitis A, you will want to do a Hepatitis A titer initially to see if immune, and if they're not immune you would want to immunize if they're not immune. And then recheck the titer after immunization, because sometimes with immune dysfunction, the immunizations may not not work and you may need to re immunize. For Hepatitis B, you would do this initially to see the status. And if they're not immune, you would want to immunize and then recheck the titer after immunization. You might need re immunization with a double dose. If the patient is surface antigen positive, you'd want to get a viral load because they might have chronic Hep B. And in the case of an isolated positive core antibody, you would also want to check the viral load as well. And if the viral load is zero at that point, you might want to immunize. And for Hepatitis C, you want to initially check the status of Hep C. If they were treated before, you should actually get a viral load because the antibody will most likely stay positive forever. And whenever you suspect an exposure you can recheck, because you can get Hepatitis C more than once.

38:25
Measles and varicella titer, mainly you want to check these to see if immunization is needed. Urinalysis is as usual and pregnancy as usual. You don't have to get a pregnancy test every time, but if the patient wants it. And also, if the person is on Tenofovir and you see glucose in the urine with an elevation in creatinine, you should suspect a thing called Fanconi syndrome and stop that Tenofovir. These are very rare complications but both the older TDF, even the newer TAF, has been implicated in Fanconi syndrome, just something to know about. Doesn't

happen often, but just a good little thing to tuck in your head. Lipids, we usually test a little more frequently than we might in other patients without HIV because they do have a higher risk of heart disease. And thyroid testing is a maybe, although adults with have HIV do have a higher incidence of thyroid dysfunction than those without. And then gonorrhea and chlamydia, you want to test the sights of exposure, cervical, urethral, anal, and oropharyngeal And then syphilis you want to do that test initially, and more often if there's a risk of exposure. And it's important to use the same test every time to be able to follow those titers, if necessary. Trichomonas you do if the patient has a vagina and is sexually active. And HLA B 5701, you do this before you start a regimen containing Abacavir to see if the patient is at risk for Abacavir toxicity. And Abacavir is something still in use. I know it's a little bit of an older, sort of middle older medication, but we still use it. Still a good med.

40:52
So back to our patient, again, he is a 25 year old cis male, seen his first visit. And you know his viral load and his CD4, his CBC and his renal and hepatic function are all normal. What else might you want to order at the lab for what you know about him? So this is what I want. I want to glucose, I want lipids, I want urinalysis, and do a syphilis test. I want to do three site testing for gonorrhea, chlamydia. Do a Hepatitis panel, TB screening, I want to do measles and varicella titers. And don't forget that his initial visit with the viral load, you want to do the HIV GenoSure PRIme, the genotypic resistance testing. So you want to do that for starting treatment, but it should not hold up rapid start, you know, you want to start the medication. You don't want to wait for the results, just start the med.

41:50
Okay, and then let's talk about Jean again. So she is our 65 year old trans female, let's say she had a brief relapse with IV heroin two months ago. How would you check for reinfection with Hepatitis C? And why would you want to know her Hep A status? So so since her Hep C antibody is probably still going to be positive, remember she was treated, she had Hep C and she was treated and cured. And how do you know she's cured? Her viral load was zero last year. So you're worried that she may have been reinfected. So you want to check her Hep C viral load, because her antibody is still probably going to be positive. Hepatitis A vaccination is recommended for all adults with HIV. So if she's not immune, you'd want to immunize her. But also people who use IV drugs can be susceptible to Hepatitis A, which is another reason to immunize her. Other reasons are if she has chronic liver disease. So there's a bunch of reasons you might want to know her Hep A status.

43:00
And here is a question. So genotypic resistance testing, that's the GenoSure PRIme, when should that be ordered? Or should it be ordered? A) at the initiation of treatment, B) only by an HIV specialist, C) when the viral load is over 500, D) A and C or E) B and C?

43:30
Okay, good, good. Good. Yeah, A and D, I think, are good answers there. Let me explain that a little bit. Yeah, I said A A and C. But, I would accept A as the answer. I guess it's a little bit of a trick question, I didn't mean it to be. But at the initiation of treatment is the right time to do

genotypic resistance testing. When the viral load is over 500 and you suspect treatment failure is the right time also to do genotypic resistance testing. And what I mean by that is, you know, sometimes patients will just stop taking their medications, as you know, and then the viral load will go back up. You don't necessarily have to do resistance testing at that point, because maybe if they just start taking the medications again, their viral load will be suppressed again. But, you know, like I said, I often will talk to an HIV specialist about when is the right time to do resistance testing, if I'm not really sure. But for the patient who's stopped taking their medication and their viral load went up to 1000, that's the time for you and them to have a serious conversation about adherence and what gets in their way of taking their meds.

45:09

And next section is on routine screening. So the routine screening is mainly the same as with everyone else except for two things, cervical cancer is different, and anal dysplasia and cancer screening is different. So, breast cancer is as usual, USPSTF says 50 to 75 every two years. There are different guidelines you might follow, but colon cancer is as usual 45 to 75 years old. Depends on the modality of screening, whether it be colonoscopy or some other type of testing. Cervical cancer, as I said, I'll get into this a little bit later, is different from people with HIV. And anal dysplasia and cancer is different from people without HIV. Lung cancer is usually 55 to 80 with a 30 pack year history, and this stuff is all in the guidelines. So you know, sorry, I'm going through it a little bit fast. And prostate cancer is 55 to 70, that is individualized screening. We know that PSA can't always be completely reliable for all patients. Bone density, some experts recommend baseline bone densitometry screening for osteoporosis in postmenopausal cisgender women, and in cisgender men, and transgender women over 50 who have HIV. Aortic abdominal aneurysm is screened for with an ultrasound in cis men and trans women who are 65 to 75 who have ever smoked. And then vision screening is routine, every two years, and if the CD4 is under 200 then it is annually. And as mentioned, the recommendation for cervical paps are different for people with HIV. And these guidelines here are from the Clinical Guidelines for the AIDS Institute. So you can always go back to them to look at them more closely.

47:31

But what's different, paps begin within two years of the onset of sexual activity, or by the age of 21. And for those without HIV, it's just at age 21. For people with HIV, paps are annually until two tests in a row screen negative and then every three years. And for those without HIV, it's every three years. And also there is no upper age limit for paps for people with HIV. And for those without HIV, the upper limit is 65. And also vaginal paps are recommended after total hysterectomy for people with HIV, but not for people without HIV unless they had a high grade precancerous lesion or cancer. And here are some recommendations for screening for anal dysplasia. The data is limited and even kind of conflicting, but the guidelines I'm sharing here are based on expert opinion. And it is suggested that patients be engaged in shared decision making regarding screening, regardless of whether or not they got the HPV vaccine or not. They can discuss screening at any time, but the recommended age is after age 35. Also, if there are any symptoms, of course evaluation is recommended at any age. Further recommendations are for annual digital rectal exam on all patients with HIV over 35.

49:05

Let's talk about our case again. This is Ray, and Ray engages in anal receptive sex. You discuss anal pap smears with him and he decides to wait to start screening at age 35. His immunization records reveal that he received the complete series of HPV vaccination, will that change your conversation? And the answer is no. You know, it's wonderful that he had the HPV vaccination series, but that really doesn't enter into the conversation about whether or not he should getting anal paps, with or without the vaccination.

49:42
And then our next question, our case is Jean again and Jean tells you she had gender affirming surgery and has a neovagina and she has taken hormone therapy and she would like to get a mammogram. So what do you say? My next slide. I'm going to say that most of us would need to find out some information before on how to proceed with screening. And here's a link that I found very useful. The UCSF Transgender Care Guidelines. Their recommendation is here on how frequently to do a pap on a neovagina, and also about the frequency of mammograms. So I'll leave it at that, I won't get into details for sake of time. But let's talk about other screening exams for this patient besides that, you might want to do bone density. If she's had more than a 30 pack year history of smoking, you might want to do a lung cancer screening. You know she's a smoker, so you would want to do an abdominal aortic aneurysm screening. You would want to make sure she had her colon cancer screening, we would talk about prostate cancer screening with her, and anal dysplasia screening, and digital rectal exam.

51:01
Okay, here comes another question for you. Alright, which is true regarding preventative screening of adults with HIV? A) cervical cancer screening recommendations are different for people with HIV compared to people without HIV, B) colon cancer screening should stop at age 65, C) people a CD4 cell counts over 200 do not need routine eye exams, and D) colonoscopy is the only recommended screening method for colon cancer screening. Okay, good. Yep. Cervical cancer screening is different. And as we said, there's a couple of things that are different, like there's no upper age limit and you have to do them a little more frequently. But that's all on the guidelines.

51:54
Primary prevention. So these are all the same things that we do for everyone, regardless of HIV status. Smoking cessation, should they take an aspirin, should they be on Tamoxifen. Make sure they get domestic violence screening, etc. Prevention of opportunistic infections and full disclosure here again, I usually get ID on board to ask some questions if I'm unsure. Primary prophylaxis is prevention of the first case and secondary is preventing a recurrence. So with Cryptococcus there's no primary, but if you're treating, you likely have ID to help with this. Same with CMV, if you're treating, you usually have ID to help with this. MAC prophylaxis for those whose CD4 under 100, have a viral load, and usually it's a weekly dose of the zithromax. Again, I will ask for help. PJP for CD4 under 200, usually it's single strength Bactrim once a day or double strength Bactrim every other day. And Toxo for CD4 under 100 and the IgG is positive, also single strength Bactrim once a day.

53:12

And on to immunizations. So adults with HIV get all the routine adult vaccinations like flu, Tdap, and it's recommended that they get Hepatitis A and B if not immune, meningitis serotype non B, PCV 13, and Pneumo 23. Varicella and MMR if not immune, but the caveat for varicella and MMR being that their CD4 count has to be over 200 because they're live vaccines. The COVID vaccine is recommended for all persons living with HIV regardless of viral load or CD4 cell count. And just less than a week ago, The New York Times reported on a large study of 15,000 individuals with HIV who were hospitalized for COVID in 24 countries. Comparing them to people without HIV, it showed that after adjusting for age, sex, disease severity, and the presence of other conditions, HIV infection increased the odds of dying from COVID 19 by 30%. The magnitude and length of immune response to a vaccine can be affected by CD4 count and by HIV itself. So some vaccinations, as we mentioned, might require more frequent boosters or increased dosage in order to get an adequate response. And the key point here from our guidelines is that no live vaccines are to be used if CD4 is under 200.

54:36
So here is another question, which is false regarding immunization practices for adults living with HIV? A), meningitis serotype non B vaccine is recommended, B) they should not get vaccinated for COVID-19, C) both PCV 13 and Pneumo 23 are recommended, and D) HIB vaccination is not routinely recommended unless there's another indication. Okay, good. Excellent. Yeah. It's false that they should not get vaccinated for COVID-19. And in fact, after this new information, I would argue that people living with HIV should be first in line.

55:24
Thank you very much. I will turn it back over to Tara.

55:29
Thanks so much, and we can jump right into the questions. So we actually have a few. We have a first question here. What is the impact of HIV as an adult becomes older on their immune system?

55:45
Well, it really depends if they are virally suppressed, you know. If they maintain a viral load suppression and adequate CD4 count, I mean, it is not as though the immune dysfunction stops, but it definitely is improved. And I'm not sure quite how to quantify it, I'm not sure that that information exists. But the virus itself, even if there's like a reservoir of virus left in the body, it does have some pro inflammatory effects. So you can expect maybe there is some immune dysfunction sort of ongoing at a low level. Hope that answers the question.

56:35
And we have a comment here, thank you for sharing. Remember to ask them if they are 100% compliant with HIV meds. If not, you will need to check a viral load CD4, you'd be surprised how many people are not 100% compliant.

56:55
Yes.

56:57
Thank you for that comment. And then there we have final question here, another aging question. How does aging impact resistance to HIV meds?

57:10
I think resistance is more a function of what you've taken, how frequently, adherence. If you've taken an agent and you're not adherent to it, then you're more likely to become resistant to it. I'm not sure if aging has, that's a good question and I'm not sure I'm qualified to answer that, but I would say it's not.

57:34
Okay, thanks so much, everyone for joining today. Thank you so much, Dr. Dyer, for presenting today.

[End]