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HEPATITIS C AND HIV COINFECTION

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[video transcript]

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Dr. Worry Allison is vice president of Health Policy at the University of North Texas Health Science Center at Fort Worth, and director of their Center for Health Policy. She attended Imperial College School of Medicine in London, completed internal medicine residency at New York Presbyterian Weill Cornell Medical Center, and infectious disease fellowship at New York University. Dr. Allison holds a PhD in Public Health and Community Medicine from the Kirby Institute, the University of New South Wales in Australia. She is elected to fellowship of both the American College of Physicians and the Infectious Disease Society of America. Dr. Allison is passionate about the health and well being of underserved populations. She has been successful in securing continuous federal funding for her work, which includes establishing and directing the National Rural telementoring Training Center. Over to you, Dr. Allison.

01:06

Thanks so much for having me today. So I'm going to talk today about Hepatitis C and HIV coinfection. I have no disclosures. So learning objectives today are to describe the epidemiology of hep C among people living with HIV, discuss strategies to prevent Hep C among people with HIV, to describe the screening and diagnostic workup of Hepatitis C, and to discuss the clinical management of Hepatitis C and HIV coinfection. So there's this endemic that exists between HIV Hepatitis C and substance use disorder. So there are a lot of different definitions of this endemic but the one that I like is in a Lancet editorial a few years ago, and it describes us endemic as two or more disease states that adversely interact with each other negatively affecting the mutual course of each disease trajectory, enhancing vulnerability, and which are made more deleterious by experienced inequities. And I think that definition speaks to having to look at these three different diseases including HIV HCV, coinfection, in the context of the numerous factors that contribute to, to them, and the numerous factors that have to be taken into consideration when you are trying to get a patient to cure and to look after them in a holistic way. So HIV, HCV coinfection of people with HIV in the United States, about 25% are co infected with Hepatitis C, some data, some reports, as much as a third, about 10% of CO infected with Hepatitis B or HPV. And because it is this endemic 62 to 80% of people with HIV who inject drugs also have Hepatitis C. Now, this is a fairly old slide 2016, looking at lifetime risk of HIV diagnosis by state but I still use it because things haven't changed even though the absolute numbers have changed the general kind of trend that it's showing or pattern that it's showing hasn't. The darker the blue, the higher the lifetime risk of developing, developing HIV. And as you can see, there's this band of blue across the southern United States. And indeed, the epicenter of the HIV epidemic is still across the southern United States. And what this slide does not show is that if you get HIV and you live in a southern state, you are more likely to die from it. As I said, not much has changed. And this is a more recent slide from 2019. That shows the rates of new HIV diagnosis across across the country. And as you can see, new HIV diagnosis is still a lot more per 100,000 population in the southern United States. Now, there are also racial and ethnic disparities or health inequities in relation to HIV infection, and this slide shows new HIV diagnoses in the US. And as you can see, black African Americans have 42% of new diagnoses whereas they comprise roughly 13% of the US population. racially, racial and

ethnic inequities exist also in Hepatitis C prevalence and mortality. And so Hepatitis C prevalence in those who self identify as non HIV Hispanic Black is higher than in other racial and ethnic groups. Moreover, among those who self identify as Hispanic population based surveys have shown the prevalence of HCV sero positivity so antibody positivity differ markedly by country of origin or ancestry and there's a higher prevalence in those of Puerto Rican versus Mexican descent. Mortality rates from Hepatitis C in Hispanic and non Hispanic blacks are twice those observed for non Hispanic white people. And among people with HCC or hepatocellular carcinoma or liver cancer one of the consequences of long term untreated Hepatitis C, Hispanic people have substantially poorer survival rate than non Hispanic white people. HCV infection is associated with lower income. And poor minority communities are therefore at higher risk have higher rates of morbidity and mortality or sickness and death from Hepatitis C. Now, it's really important to point out that the HIV and HCV health inequities are not just limited to race and ethnicity. So when you look geographically, rural compared to urban areas, roughly 20% of Americans live in rural areas, yet 10% of physicians work there, and that reflects chronic works shortages. There have been recent notable increases in HIV incidence in rural communities particularly but not exclusively, in the southern United States. And that's led to the convening of the National Advisory Committee on role in health and human services in August a couple of years ago to discuss the issues and make recommendations. Now, when you look at the rate of physicians per 100k population, it's roughly 39. I'm in rural versus 53, but urban data on what we call hipsters, so Health Professional Shortage Areas from December 2019 show that most designations are in entirely or partially rural areas. Now hipsters are divided across disciplines, so primary care, mental health and dental hipsters on average, you have about 6%, a partially rural and a significant number almost all entirely rural. So limited specialty care is really an immense challenge in rural communities and represents health inequities and and health disparities consequently. Now with this slide, I want to point out that Hepatitis C is a multi system disease. So naturally, we tend to go towards thinking that it's, it's just a it's a liver disease, and it is that and one of the consequences as I mentioned before, of chronic Hepatitis C is cirrhosis and Hepatitis, hepatocellular carcinoma HCC but there are also other consequences. So people with viral Hepatitis with with Hepatitis C, often complain of neurocognitive disturbances, you get cryoglobulinemia, which leads to B cell non Hodgkins lymphoma, you get vasculitis and the consequences of that are kidney disease and chronic kidney disease and then because of the vascular inflammation, cardiovascular disease, and stroke, and then that's related, the chronic inflammation is also related to insulin resistance, and diabetes. So it really is a multi system disease. So the clinical consequences, moreover, of HIV and HCV coinfection is that when you look at plasma HCV RNA levels, and they're higher in matched HIV positive versus negative controls, and they're inversely correlated with CD4, CD4 counts, so a low CD4 count means that your HIV is not under good control the T lymphocytes the CD4 cells are the cells that the HIV, the immune system cells that the HIV virus attacks and destroys, so destroys, so when that's low, it means HIV is not under good control. And so when you have HIV not under good control, and low CD4 counts, you have high plasma RNA levels for for Hepatitis C, and so co infected individuals develop histological and clinical features of HCV liver disease far more rapidly than those that are mono infections. So those that have Hepatitis C alone, and so that's even more of a reason to to detect ECT, Hepatitis C and people with HIV and to treat them and hopefully cure them.

10:06

Now additionally, patients with HIV infection are less likely to clear the Hepatitis C virus and to develop chronic infection. So a proportion of people who are infected with Hepatitis C are able to clear the virus get rid of it completely with their own immune system. But they're less likely to do that if they have HIV infection. tolerance of antiretroviral agents that treat HIV is poor in patients with chronic Hepatitis, and there's greater risk of toxicity to the to the liver. Importantly, clearance of Hepatitis C has been associated with regression or liver fibrosis. So again, an important reason to treat Hepatitis C in people that are co infected with both Hepatitis C and HIV. So what are some of the strategies that we can employ or attempt to implement or or what interventions can we put in place to try and reduce to try and prevent Hepatitis C in people with HIV, so reducing CO infection and treatment as prevention are important strategies. Treatment as Prevention is something that we understand with HIV. So we've now known for several years something called u equals u so so undetectable equals on transmittable, which means that if an HIV viral load is suppressed, we say undetectable, but if it's suppressed, below, below 200. A patient cannot transfer cannot infect anybody else with HIV. So that's the concept of treatment as prevention. And that applies also to Hepatitis. To Hepatitis C, if we can cure someone who's still currently injecting drugs, and they're still eligible for Hepatitis C treatment, even if they are, we reduce the likelihood of them, infecting someone else, even in their injection circle. So that's a really important harm reduction. Concept treatment is prevention. efforts to reduce CO infections with Hepatitis C and HIV include holistic sexual health provided within primary care settings. Strategies like pre exposure prophylaxis that exists for HIV infection, syringe services and other harm reduction and harm reduction programs. national guidelines recommend vaccination right and so it's important that people that are diagnosed with HIV are tested for also for for Hepatitis B, and they're vaccinated for Hepatitis B, there's this they're able to be so and then they're also screened for for Hepatitis C infection with annual retesting of, of them thereafter, if they had continued risk, and they're different providers to define continued risk differently. Now, there are also operational considerations that can that can be considered when thinking about how to prevent HCV Hepatitis C and people with HIV. So automated reminders in an electronic medical record can can assist in reminding people to screen and re screen and also reminding about vaccination. And I know that not all clinics have an electronic medical record. But if you do, that those those reminders are helpful. Another important operational consideration is reflex testing automatically from a Hepatitis C antibody to Hepatitis C viral load. Sometimes not always, but sometimes when there isn't that reflex testing, patients get lost. Or they'll do a provider will do an H HCV antibody and not follow through to the diagnostic steps of doing a viral load. And I'll talk shortly about about screening versus diagnosis. Then another really important operational consideration is around integration of care. So integration of of Hepatitis C care, and even substance use disorder services co located at the same place where a patient is getting their primary care reduces barriers and access and it just makes things a lot easier for patients when everything they need health wise is located in one place and they don't have to be referred out. So who do we screen and test So HCB, this slide is lifted directly from the HCB national guidelines. The guidelines change recently so so it's now one time routine opt out testing for all individuals aged 18. And over. It's really important to also remember that prenatal HCV testing is also now part of routine prenatal care. And then periodic repeat testing, as I said, is offered to people at continued risk, and then number of HIV providers who just screen their patients annually just routinely, but it's really their increased risk in terms of annual

testing. So as I, as I touched on previously, the natural history of Hepatitis C co infection does complicate screening and diagnosis. So I like to remember that 2080 and 20. So once somebody is exposed to Hepatitis C, roughly 20% of people will clear the virus spontaneously with their own immune system, roughly 80% will develop what we call chronic Hepatitis C infection. And then that 80% 20% over 20 to 30 years or long periods of times if they're not co infected, will develop cirrhosis of the liver, so So live with significant liver disease, that timeframe is a lot shorter in coinfecting patients. So for screening and diagnosis, how do we test so the screening test is the antibody, anti HCV test, it's detected a new chronic and resolved infection, it tells you if a patient has ever been infected, and it stays positive, once it's positive, it's always positive, you need a confirmatory test, it's really important to remember that you can have a negative antibody test in the setting of acute Hepatitis C that's early enough such that an immune response hasn't been mounted. And it uses enzyme immune assay technology in terms of at the lab level, the complement confirmatory method is HCV RNA viral load. So so using PCR polymerase chain reaction. Important to also remember that if somebody has had a previous previous antibody positive test, and Hepatitis cleared the virus, you thereafter, you're always going to screen them with a viral load, because their antibody will always be positive thereafter. That is a rapid Hepatitis C antibody test available by finger stick, there's only one FDA approved brand in the United States. So there are several different brands. You can do it by you can do this testing by by fingerstick. It's a screening test with greater than 98% sensitivity, you get the results in 20 minutes, there's certain caveats that it's in for use an individual's 15 or older and persons at risk for Hepatitis infection. And it's not for use in women who are known to be pregnant. Now, this is a summary table of the HCV diagnostic pathway. So as I said before, you're going to do an HCV antibody to screen in most instances, and then you're going to do an HCV. PCR to to confirm it both the negative that's that's easy, then then there's no that's no Hepatitis. If the antibody negative and the HCV viral loads as positive that can mean different things. It can mean early acute Hepatitis C so so early, that they haven't mounted an immune response and then no, there's no antibody, it can mean chronic HCV in an immuno suppressed person, right? So who again, can't count my man to sufficient immune response to to to produce antibodies, and then it can also mean a false positive HCV PCR test. If you have a positive antibody and you have a negative HCV PCR, it can mean two things, it can mean that that person has said the virus right within an immune system, so resolution, but it can also mean that person has acute Hepatitis C in a period of low viremia that occurs early, early during infection. And then the third option is that you can have a positive or indeterminate antibody tests and a pause TIB viral load and that always means active disease. Now if you if you there there are a number of different surveillance definitions right of Hepatitis C and if you look them up, you can get yourself tied up in knots around around is this early is this late chronic as early chronic is this, there's so many different definitions but those surveillance definitions and not for use in practical everyday clinical use. This is the CDC Alder algorithm, which is pretty self explanatory, right you screen as I said, you screen it with the antibody, you confirm with the with the RNA viral load, you have to have some thought around the history that you get from the patient as to where is this a situation whether where this is possibly acute Hepatitis C where I need to, to repeat the test at a later point. But besides that, really don't get yourself tied up in knots around the surveillance definitions that you'll find if you look them up.

So now moving on to who can treat HIV HCV coinfection. So So nonspecialists providers can, the ASCEND trial, which was done with HCV mono infection was done in 13 urban federally qualified health centers, patients were randomized to receive HCV treatment from a nurse practitioner or a primary care physician or a specialist. And what was found was that HCV treatment that was administered by those three groups of people were equivalent and that nurse practitioners who had undergone training the care they delivered was good and safe and equally as good as any one case better than then that experience with specialists. And this clinical trial included challenging sub population so 20% had so cirrhosis. So there is evidence in terms of trial evidence for mono infection to support workforce development, non specialist providers and so I know we are talking about HIV HCV coinfection, but for the for quite a long time now. And HIV medical association has supported non specialists, providers with suitable training treating HIV alone HIV mono infection. And so putting these two things together clearly, if somebody is CO infected with both HIV and HCV, non specialist providers can provide care. And the HIV medical association has a standing statement of support in that an explanation to that effect. So if non specialist providers are going to treat HIV HCV coinfection, it's really important that they're provided with the tools and support to do so to get to a place of comfort, where they're they're able to learn about treating Hepatitis C, and in this context, I'm talking about providers that have already acquired the skills and the knowledge that they need to treat HIV infection and now they're thinking Can I can I manage to treat Hepatitis C in in my patient? Do I can I do this without referring them out and they can. There are a number of different tools, tele mentoring tools, so tele mentoring utilizes telecommunications technology to to provide mentoring and education and support. There are a number of different telementoring modalities and some of them are up here Project ECHO a number of people are already familiar with. So that is a hub spoke model where you have specialists usually not exclusively, but but specialists, people with content, content expertise, usually, but not exclusively at an academic medical center and communicating with providers via video conference and then providers take that knowledge to treat their patients individual consultation. So what comes to mind is a program at UT Health San Antonio I previously worked where a stop HCC stop hepatocellular hepatocellular carcinoma program where a hepatologist would get on the phone with primary care providers in the Rio Grande Valley to assist them to treat Hepatitis C with patients in their medical home. webinars like this are and are actually telementoring online curricula. So ATC AIDS education training center, habit, HIV HCV coinfection, specific online curriculum. And then people are surprised to hear that podcasts are actually tele mentoring. And they're gaining increased traction in medical education. And then finally, community health clubs which people are less familiar with. So adapted community health clubs, which is something I have done in my, with my team at the rural tele mentoring training center takes the traditional community health club model, which was started in Sub Saharan Africa around water sanitation and the clubs consisted of in person clubs with lay people, and they would learn about what to sanitation teach the community, and then they became trusted messengers of health information would learn about something else and teach the community about that. And so for the adapted virtual community health clubs, the the community health clubs are in a virtual environment, and they consist of, of health workers. And so they're places where there's consensus acquisition of knowledge in this virtual environment, but they're also places of peer to peer support. As I mentioned, the ATC have an HIV HCV, online curricula that goes through six core

competencies for HIV care, and that's ragged, readily accessible online. The ACO model, again, as I mentioned, is a hub and spoke model. It was started at University of New Mexico where the echo Institute currently is by Dr. Aurora, around a lack of specialists for treating Hepatitis C back in 2003. So it's been around for a couple of decades. It has a specific format of a didactic session at the beginning, a didactic 10 to 15 minutes at the beginning of the session, and then an anonymized case that it's prepared, it's presented, and the case can be echoes now expanded so much beyond just the clinical disease focus, you have echoes that are very operational, a case doesn't have to be a clinical case. And one of the things I love about the echo programs is the is an echo session is the non hierarchy of discussion. That happens. So it's not the specialists giving their wrecks it really is a non heroic kill community of practice and learning. And that's one of the beauties of echoes. Now, I'm tools in terms of tele mentoring tools, the National Rural telementoring Training Center provides free training and, and technical assistance to implement and evaluate any of those six different telementoring models I mentioned before. There's learning on online content, everything we provide as tailored support, and we're just about to release, hopefully within the next six weeks an evaluation toolkit for those who want to evaluate the quality of their tele mentoring program. Also, um, just last week, within viral Hepatitis Awareness Month, we launched the UN HIV HCV education and learning for providers app. So this is a an app that is for anybody that wants to treat or is involved in in care along the HIV HCV care continuum. It's I say it's well designed because I specifically as a clinician made sure it was designed to be an intuitive interface, getting you to where you need to go, and in a fewer number of tabs. We just had our launch week. Last week, the app is readily available free of charge on the Google Play Store in the Apple Store. One of the sections that I'm really proud of within this app is what we call the drug Access Protocol, which assists people with assists providers with accessing Hepatitis C drugs split by whether their patient is insured or uninsured or underinsured. And it goes through the process of where and how you can access drugs for the patients including the process for different pharmaceutical assistance programs. This slide is just to illustrate that that the the care team for somebody that's coinfecting is involves a lot more than just the prescribing provider I found and others that not just me but others have found that having a community health worker or a navigator right sometimes they call navigators is really helpful. It assists all along the process of I'm caring for someone with whose coinfecting right from counseling to the hoops that you may need to jump through to get drug access to having someone that is maintaining close contact with the patient throughout the course of their, their treatment. And it really helps with this integration of, of HIV and HCV care at the at the clinic level. So preparing for HCV therapy. So now we we've got to the stage of, of treating of deciding someone, we're going to go for treatment, what is the process and what do we treat patients with this slide is just to illustrate that similarly to the HIV life cycle. Hepatitis C direct acting antiviral drugs, target different parts of the Hepatitis C.

30:54

Life cycle, again, like each HCV Hepatitis, HIV antiretroviral drugs in the future can be confusing. But similarly to HIV drugs, you have protease inhibitors, which tend to end with providores. As a map, Revere, you have polymerase inhibitors, which tend to end with blue via so that helps a memory aid. And then you have MS by vein inhibitors, and the NS by a looks like a asphere. And they tend to end in that unleaded Ledipasvir. As an example, the Hepatitis C

therapeutic back timeline, it's pretty unique in infectious disease, and that we've gone from discovering of a virus to a cure in the space of 25 years, and we haven't really ever done that before. And the real game changer was 2005, within vitro HCV replication and soon after that came the first of the direct acting antivirals around 2010. And then we got our first interferon free, fixed dose combination regimen in 2000, October of 2014, and now we have a number of different options, including Pangea topics that that teach that treat across different genotypes. Similarly, the cure rates have gone up right, with these new direct acting antivirals. And so while they're not so new anymore, we're kind of eight years into it, but they have cure rates of well over 95% and SVR sustained neurological response is a measure of cure. So who do we treat? The guidelines say everyone except those with limited life expectancy, which cannot be remediated by transplantation, transplantation or, or other therapy. And I read that out, because that's a very narrow definition. We really, we pretty much everyone is eligible for for treatment, do you have to wait until their HIV viral load is undetectable? No. Are people who are still currently injecting drugs not eligible for treatment? No. So anytime you think this person is not eligible for Hepatitis C treatment, the question you have to ask yourself is do they fit this, this criteria and, and most people don't, of course, there are hurdles, or barriers put in place around Medicaid, RightFax, and other barriers around access to drugs, but really, almost everybody is eligible for Hepatitis C treatment. And there are few treatment modifications that need to be made. For people who are co infected, you do have to watch drug interactions. And sometimes for some drugs, the duration of treatment is a little longer. And as data shows that direct acting antivirals are effective in reducing mortality, so death on in people with HIV on antiretroviral therapy, so again, important to treat. It's against this background that HERSA grant was awarded back in 2017, to cure Hepatitis C in people of color living with HIV and, and I'm going to refer to some of the data we collected. During that project. Our we had a number of different goals integrating Hepatitis C services into HIV services, and also providing substance use disorder, mental health support, provision of providers support for non specialist providers to train them and support them to treat Hepatitis C. And then we also did a lot of community education and screening pre COVID developed a patient education app as well as the provider app which we just released. And then we worked with Texas Department of State Health Services around Sentinel surveillance. These data from that project and this data is reflected by other people, other people's work in that we still see this, this downward trend along the HCV care continuum. So people who are from people who are diagnosed with HIV HCV coinfection down to people who end up being treated and there's so many barriers to this patient group. Reaching cure, and so we have to continue to be built to be vigilant and continue to provide to think of ways that we can support this this patient group to get into cure. Now cirrhosis or no cirrhosis. That's an important component of consideration, pretreatment, it affects your treatment regimen. It just affects the decision to use Riber. Byron, how long do you treat for and it also affects how you follow up patients. And so liver staging, finding out what level of liver damage that is, is important and that ranges from no fibrosis F zero to two exporters to cirrhosis. There are different ways of staging the liver. The most liver biopsies are rarely done now. There are blood markers, so fit for an app per year or two scores that are based on, you know, labs that are commonly drawn. So that's a reasonable method. elastography is also a reasonable method based on technology that is ultrasound technology that measures liver stiffness. It may be a challenge, particularly in rural or remote settings because fiber scan machines tend to be in urban centers, because they're expensive, right? A machine costs around \$150,000. So access

maybe may be difficult, particularly for our under insured, uninsured excuse me and uninsured patients. Which kind of scoring should you use? Should you use expiration date should what should you use? It's not clear really from data which is best. But you can just you just need to pick one if you're not going to do elastography. This is data from our project again we are looking at we have a large number of mono infection patients that underwent a elastography and we have a good number of patients coinfecting clients that under underwent elastography. And we're in the process of analyzing the data to see which is the measures that are equivalent because those data exists for mono infected clients but but not for the CO infected population. So we hope to be able to report on that post Hepatitis C cure, you do have to continue to be vigilant. In the United States, our guidelines are SVR 12. So 12 weeks after completion of treatment as definition of cure sustained for a large rheological response at 12 weeks, the European guidelines say 24 weeks because there are reports of viral rebound between 12 and 24 weeks. So some would say do check, viral load SPR 24 or beyond at least once. But that's not what the guidelines say. But a lot of a lot of providers do that you have to optimize the patient's metabolic profile to avoid developmental any worsening of fatty liver. So control diabetes way treat for hyperlipidemia. Always avoid use of potentially hepatic toxic medications and really alcohol there's no safe alcohol level. And as I mentioned before, when I was talking about screening, you may need to repeat an HCV RNA right in this patient group for screening, but don't do it just routine the Think about risk. Liver monitoring monitoring needs to continue. So another important thing to remember is that to be reliable if you're going to use non invasive testing, you have to compare to the levels to to the results that you've got pre treatment. And because post treatment, you get significant reduction in inflammation and so those test results will change. And so if you have patients who have discordant pre and post treatment and staging and things a little bit confusing. These are patients that perhaps may mean need to be to be referred on for a liver biopsy to really exclude advanced disease. If patients have known confirmed advanced fibrosis, even after cure, you're still going to do abdominal imaging every six months, and alpha beta protein levels to to screen for hepatocellular carcinoma, and then you're going to do LF liver function tests and MELD score every six to 12 months. And if they have cirrhosis, they'll continue to need their upper endoscopy ease.

40:47

So in summary, in conclusion as endemic framework is necessary for HIV HCV coinfection a third of patients living with HIV also have HCV infection. There are health inequities within this population group. curative treatment and cure is important because there is more rapid progression of liver disease in this group and cure should be a goal. That is a shortage of specialist providers to treat HIV HCV coinfection. But non specialists providers with adequate training and support can and should treat HIV HCV coinfection. And there are tools to assist in skill acquisition and TASH shifting for HIV HCV. Karen telementoring is one tool. And there's a comprehensive HIV HCV app provider app developed in the US context. So care is ongoing. Sorry, last point care is ongoing post cure, particularly if patients are cirrhotic. So thank you for your attention. I think we're going to go to questions. But here's my contact information. In case we don't have much time for questions.

42:00

Thank you so much, Dr. Allison. That was fantastic.

42:04

Hi, this is Jeff Weiss. Can you hear me? Yes, we

42:07

can please go ahead.

42:10

Thanks so much, Lauren. Dr. Allison, thank you so much for that comprehensive overview. What I wanted to ask is, we often encounter patients who've been told by their HIV primary care provider, that they're, they're not going to consider Hep C treatment until their HIV viral load is undetectable. And you said explicitly that, you know, that should not be a requirement. But I'm just wondering if you can elaborate that on your thoughts on why that, you know, view does persist among some HIV providers? And how to sort of counter that view?

42:49

Yeah, I mean, I don't, I think it exists partially, and I do this actually, to some extent, I just, I don't wait for the patient to be undetectable. So what you want is your patient to be somebody that is going to engage in care, right. And so I think part of them, part of them saying that maybe, particularly if it's somebody newly diagnosed with HIV, they may not be certain that they will engage in care for the duration of the Hepatitis C treatment. I think also, sometimes it may be a bit of a bargaining tool, you know, and I've done that too, right? Look, let's get let's do this. And let's, let's get you on HIV treatment, and it just your viral load just needs to be on the way down, and then we can we can we can get you on Hepatitis C treatment. So there's that consideration. And then the third consideration, I think is, is also how much can a patient cope with right and not to be paternalistic, because our patients can cope with a great deal. But sometimes you just want to do one thing at a time, especially with patients who are newly diagnosed, right? Or who have just reengaged in HIV care after a long time and have a number of other comorbidities, you may just, you know, make the decision. Again, not to be paternalistic, or materialistic, but you just want to make that decision to just do things step by step and saying waiting until your suppressed or your viral load is undetectable is just an endpoint at which both you and the patient know Okay, now let's tackle this next thing when we've got, you know, seven different things that we're trying to handle. So I think those are those are all the all the things that that may come into consideration for provider. And I certainly didn't want to say that that's an absolute right that you shouldn't wait because as I just described, there are circumstances where the provider may decide to to make that decision and that's perfectly reasonable.

45:01

Thank you for laying out that complexity.

45:05

Here's another question from one of our attendees, is there a time to refer patients to a specialist? And if so, when?

45:13

Right so I yeah, that's an excellent question. So I think if patients have very advanced symptomatic cirrhosis, I would probably err on the side of referring that patient unless you you've had a lot of experience treating Hepatitis C. The patient group I would probably, I would probably think of referring now if you have somebody that has cirrhosis, but is asymptomatic, and you know, stable, right, they have cirrhosis, but it's not advancing. You could consider treating that patient yourself. But if they're decompensated, if they have decompensated cirrhosis, I would probably hesitate in the primary care setting to treat that patient. Now, having said that, it's going to be several months before you can get them into a into a specialist provider, then you may want to reevaluate that and see how much support that you can get to do it because you doing it is much better than the D compensating cirrhotic waiting a year to see a hepatologist. But you as the provider has to be comfortable doing that.

46:43

Thank you to you Dr. Allison for the excellent presentation.

[End Transcript]