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Time needed to complete: 32m

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## ART and Cardiometabolic Health: What's the Connection?

### Announcer:

Welcome to CME on ReachMD. This episode is part of our MinuteCE curriculum.

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### Dr. Segal-Maurer:

This is CME on ReachMD, and I'm Dr. Sorana Segal-Maurer. Here with me today is Dr. David Wohl, and we have a great case to discuss with you.

DJ is a 40-year-old cis-female diagnosed with HIV infection in 2016. She relocated to the US from West Africa due to civil unrest at home in 2015. The CD4 cell count in nadir was 231, and at present is 850. She was started on bicitgravir, tenofovir alafenamide, and emtricitabine, with a suppressed viral load, and a BMI at the start of antiretroviral therapy of 26 kg/m<sup>2</sup>. Current BMI 32 kg/m<sup>2</sup>, which represents about a 28-pound weight gain over the first 5 years. Blood pressure at the start of antiretroviral was 124/86. Currently at 146/92. Hemoglobin A1c now is 6.1%. Diet has opportunities, and there is limited exercise in her lifestyle.

Dr. Wohl, can we dive right in? Let's talk about her weight gain.

### Dr. Wohl:

Yeah. So I chose this case because, A, it's real, and, B, this really reflects a lot of the data we've seen, especially from the ADVANCE trial.

People will remember this is a trial of 3 different antiretroviral regimens, and we saw a differential weight gain across these regimens, with the least weight gain in people who are on TDF and efavirenz and the most weight gain in people on TAF plus dolutegravir. So that meant that, you know, either dolutegravir plus TAF makes people gain a lot of weight, or maybe people on efavirenz and TDF just don't gain much weight because of some inhibition of weight. And it turns out that that definitely is the case. That doesn't mean that both aren't true. So it's controversial, it's a little complicated, and we really don't understand fully the contribution of different medications to weight gain. We do know that there are some medications, TDF in particular, that inhibit weight. Thus it's very hard to compare apples with oranges. In this case, we also have the return to health phenomenon. And in the ADVANCE trial, women who gained weight – and women tended to gain quite a bit of weight in that trial – who were on dolutegravir and TAF, their weight gain pretty much equilibrated with national numbers for BMI for that group and that age. So is this return to health that's not being held back by some of our older antiretrovirals, or is this an excessive weight gain? Really hard to tell right now.

Regardless, this woman gained some weight, her blood pressure went up, her A1c probably went up as well, her glycemic control, so we have to deal with it. And as I mentioned, her diet is not great. She works as a nurse's aide, she's on her feet all the time, very hard to go to the gym. So there are some things we're going to have to work on, regardless of the cause of her weight gain, to help her. Switching her HIV therapy – data don't show that that's going to work. So really for her, for me, is working together and thinking about ways we can cut some calories, we can work on maybe integrating some exercises at home, maybe some on the weekend. Try to get her metabolic risk a little bit more in balance.

**Dr. Segal-Maurer:**

Regardless of what the antiretrovirals are, there's between 2-3 kg weight gain, be they TAF, be they integrase, be they not. After that, for most studies, there is a plateau. There's just minimal weight gain year after year, which does intersect to a typical weight gain for non-HIV-infected persons. In this case – and what we saw with ADVANCE – is not a plateau, just a continued rising trajectory, and we're very concerned about these outliers, to be able to describe them better. Is it race? We've definitely seen it more in people of color. Is it gender? We've seen it more in women. Do we need to treat them differently with antiretrovirals? That data is not out and does not suggest we should wholeheartedly go in that direction.

And you also mentioned efavirenz and TDF as a little bit weight-suppressive. Some of their toxicity – and I'm not sure that returning to that use is a good strategy for most people living with HIV. The NHANES data also suggest that for the average American between the age of 20 and 40 there is a steady +1 kg/year of weight gain.

So a lot to really focus on, talking about the traditional approach to trying to maintain weight and lose weight. And certainly, we could really speak about this for some time, but we are out of time for today.

This has been a great bite-sized discussion. We thank you all for listening.

**Announcer:**

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