PODCAST SERIES: **Bare Bones: A Practical Osteoporosis Overview**

Podcast 3: **Catch Me If You Can: Osteoporosis Treatments For High-Risk Patients**

Host: Christine Palmay, MD
Guest speaker: Akshay Jain, MD, FRCPC

Edited slightly for readability.

Christine Palmay
Welcome to this podcast series entitled, ***"Bare Bones: A Practical Osteoporosis Overview,"*** hosted on MDListen. This podcast series was developed by the Canadian Collaborative Research Network and is accredited. There are four podcasts in the series, each worth 0.25 Mainpro+ credits. When you complete all four podcasts, you will be eligible to claim one (1) full credit.

My name is Dr. Christine Palmay, and I am delighted to be your host. Today's podcast is entitled **"Catch Me If You Can: Osteoporosis Treatments for High-Risk Patients."** As mentioned, this is the third installment in our series and focuses on the following learning objectives. Number one: Explore the role of a primary care physician in the identification of high-risk patients; number two: Recognize the importance of long-term treatment; and number three: Describe appropriate ongoing assessment and management of high-risk patients.

This program received financial support from Amgen and the planning committee took all steps necessary to mitigate potential biases. Our faculty disclosures along with other relevant information are all available on the MDLearn website under the MDListen tab. From here, you can also download a handout with key messages from this session.

It is my pleasure to be discussing this topic today with my colleague, Dr. Akshay Jain. Dr. Jain is a clinical and research endocrinologist in Surrey, BC. He is the only Canadian physician to win the American Association of Clinical Endocrinologists—Rising Star in Endocrinology Award in 2022. And he is Canada's first physician to be triple board-certified by American Boards of Endocrinology, Internal Medicine, and Obesity Medicine. First of all, welcome; second of all, immense congratulations.

Akshay Jain
Oh, thank you so much, Christine. It's a pleasure to join you on your wonderful podcast. So, we are here to tap into your expertise and clinical experience to really debunk some of the myths around treating our most fragile patients at risk of fractures. I want to start by talking about missed gaps in care. Who are these patients at risk and why are they being missed? Thanks so much for that opening question. Individuals who are at very high risk of developing fractures, there's multiple ways that we evaluate an individual's risk of developing fractures.

One such thing that your audience may be aware of is [Fracture Risk Assessment Tool] FRAX scoring system. This is something that one can avail off online, it's a calculator, free to use. And the FRAX scoring system basically suggests what an individual's risk of developing either a major osteoporotic fracture or hip fracture would be in the next few years. We want to delineate at least those patients that are high risk or very high risk of developing fractures. So, based on the FRAX scoring system, if an individual is calculated to have a major osteoporotic fracture risk of 20% or higher, or a hip fracture risk of 3% or higher, then that individual is considered to be a high-risk person.

At the same time, when we do a bone density for people in order to screen or surveillance for their bone density, we see the T scores that fall between -1.0 to -2.5. And if they also have a concomitant history of a fragility fracture, either at the hip or in the spine, then those individuals would also be categorized as high risk. Now we can then look at an even higher-risk population; so, these are very high-risk individuals. And these would basically be those people who have had a fracture, especially in the last 12 months, because right after a fragility fracture is when the risk of subsequent fractures is higher. These would also constitute individuals who have had multiple fractures, or people who are already on treatment for osteoporosis, despite which they develop a fragility fracture, or perhaps those individuals who have been on glucocorticoid therapy—so that's prednisone for at least 3 months or higher and have developed a fracture—or if we do a bone density, and we find that their T score is -3.0, or those individuals who have had past injurious fall, or a high risk of fall in the future. Or if we again look at the FRAX score, then the FRAX score, that constitutes a major osteoporotic fracture risk of 30% or higher, or a hip fracture risk of 4.5% or higher, all of these would be very high-risk individuals.

The reasons why there's missed gaps is a lot of times either we're not screening individuals appropriately or not recognizing who is at risk of developing these fractures. Occasionally, when people have a fracture, they might go to the [emergency room] ER, and then they are sent back, and we may not realize, as their healthcare providers, that they might have had a fracture; hence, we are not able to 'risk-categorize' them optimally. So, these are some of the main reasons why we might be missing these individuals.

Christine Palmay
I think that's such an important point—unlike a heart attack or a stroke, where there's an automated chain reaction that ensues—oftentimes an individual will end up with a risk fracture. And I don't know about it till a year later and perhaps not even, unless I ask specific questions. A theme that has consistently come up in other podcast recordings is the art and the importance of an excellent history, which you've just pointed out as well. I haven't actually asked any of our other experts to provide a clinical case; I think this is a wonderful opportunity: Do you have a case in mind that you'd like to share with our audience to illustrate this gap in care?

Akshay Jain
A case that comes to my mind almost immediately [is] someone that I saw recently in my clinic; this is a 73-year-old female, who was originally diagnosed to have osteoporosis about 11 years ago on a screening bone density. She was started on oral bisphosphonate therapy with alendronate; subsequently after that, no follow-ups were done from an osteoporosis perspective. She was one of those individuals who had 'started and forget it' as far as starting medication for osteoporosis is concerned. Unfortunately, in 2019, she developed a wrist fracture after falling from a standing height, and even at that point of time, the doctor just saw that she was already on appropriate treatment with oral bisphosphonate. They said, "oh, we don't need to do anything else for her because she's already on medications." However, this would have constituted a failure of therapy based on the definitions that we just went over. Unfortunately, because this was not caught and addressed, she then developed a hip fracture last year and was referred to me for the management for osteoporosis.

Christine Palmay
And of course, that gap in care further intensified by [coronavirus disease 2019] COVID, when we weren't necessarily seeing patients; it's just tragic and an example of a missed opportunity. So, in terms of high-risk patient, patients and treatment options, oftentimes primary care physicians are concerned about risks of treatment: How long is too long? Perhaps you could provide a brief summary of starting treatment, initiating and setting expectations.

Akshay Jain
Absolutely. I think it's very important to set the expectations right from the beginning. I tell all my patients with osteoporosis that osteoporosis is a condition that does not have a cure but does have treatments. It is one of those chronic conditions; as we grow older, our bones are growing older as well. And if we have osteoporosis, then these bones require ongoing nurture and care, especially for these high-risk individuals that we discussed. The risk of developing a subsequent fracture is highest right after the fracture in the next 12 months. But even after 12-months elapse, ongoing they're still at a risk of developing subsequent fractures.

Depending on the type of treatment options that we use for the management of osteoporosis, the total duration of treatment can vary. So even while they are on treatment, or if they are on a "drug holiday," it's important to periodically assess what their risk for fractures is. That can constitute either doing serial bone densities for surveillance, or obviously checking the histories—finding out if they've had any falls or fractures since the last time they were evaluated, medication history, and obviously looking at their blood work. So, all of those are very important; this constitutes good ongoing care for your patients with osteoporosis.

Christine Palmay
So, 'drug holiday' is such a hot topic, if you could just briefly provide a summary of what is a 'drug holiday'; for which medications, for how long? Very much a topic that family doctors often are confused about.

Akshay Jain
It's also a very clinically relevant topic, as you point out, Christine. So, drug holidays: A cheat trick to remember is that a drug holiday is essentially related to bisphosphonate class of therapies. The reason why we do a drug holiday is because oftentimes when we use this class of medications, after a certain period of time, we may see that there is no ongoing benefit of continuation on the bisphosphonate therapy. And that speaks to the limitations as far as efficacy is concerned with this class of medications.

Typically, if we are using oral bisphosphonate therapy, then a drug holiday may be considered after 5 years of treatment. If one is on IV bisphosphonate therapy, such as alendronic acid, then one can consider a drug holiday after 3 years of treatment. Now, having said that, one important point to remember is that a drug holiday is not the same as 'drug retirement'. When we retire from work, hopefully, we never go back to work but even if we liked the holiday, we have to go back home, eventually. So, what I mean to say is that even when someone is on a drug holiday, it's important to continually assess what that individual's risk of developing fractures is. In fact, if somebody has high risk or very high risk, I would argue that we don't even need to start a drug holiday because these are the bones that need ongoing nurture.

It's important for those high-risk or very high-risk individuals, especially if they are having ongoing benefit on the bisphosphonate therapy, it would be important to continue on that antiresorptive therapy with bisphosphonate ongoing. And when it comes to other types of antiresorptive therapy, such as [receptor activator of nuclear factor kappa-beta] RANK ligand (RANKL) inhibitor therapy with denosumab, there is no such thing as a drug holiday, because this medication essentially pushes the 'pause button' on the loss of bone. And it's important to continue with this medication because the moment we stop this medication, we 'unpause' that bone loss and then there can be consequent bone loss if the medication is not continued.

Christine Palmay
I think I'm going to steal that verbiage, "drug holiday versus retirement!" I think that's brilliant. I cannot possibly let you go without asking you one additional hot topic: Osteonecrosis of the jaw; it's such a huge concern from our patients as well. Very basic thoughts on risks and concerns as a primary care doctor.

Akshay Jain
The most important thing that I'm very thankful for is the fact that this is an extremely rare side effect. There has been a lot of studies that have looked at the actual prevalence of this side effect. And if we look at comparative risks, and this is based on literature that we have, we see that the overall risk of having fragility fracture for an individual with osteoporosis could be about 2,600 events per 100,000 people per year. So that's a very high risk of developing fractures. Now, if these individuals are started on antiresorptive therapy, then the risk of developing osteonecrosis of the jaw is as low as 0.7 per 100,000 patients per year. You look at the risk which is 0.7 events per 100,000 people per year versus the benefit, which is the potential to reduce the risk of fractures, which could be as high as 2,600 per 100,000 patients per year. All of us in clinical practice, we always try to balance risks versus benefits. And especially for these high- or very high-risk patients, the benefits of pharmacotherapy clearly outweigh any potential risks. To give you another example, if you have a patient that's 80 years of age, with a femoral neck T score of -3.3, who has never been on pharmacotherapy in the past. If we were to leave her osteoporosis untreated, then the risk of a fracture would be about 25%. Whereas, if we were to treat it with antiresorptive therapy, the risk of osteonecrosis of the jaw would be 0.01%. So clearly, I think these numbers argue that the benefits are far more exceeding than any potential risks.

Christine Palmay
It's all about the art of education, counseling, and context, which is so pertinent in many other ways these days. Parting thoughts: if I could just ask you to share three take-home messages for our audience.

Akshay Jain
So my three take-home messages would be that it's really important to identify these high- and very high-risk patients because these are the individuals who can develop subsequent falls. And these outcomes can be quite bad if we are not able to correct osteoporosis or treat it in a proper manner. So, identification is very crucial. The second important point would be that for most osteoporosis medications, the benefits of treatments are far more than any potential risks, especially for these high-risk and very high-risk individuals. And the final thing to remember is that even if we have started a patient on the medication, it is very important to continue to assess them at periodic intervals to see if the therapies working, if there [were] any side effects on it, and what their ongoing fracture risk is.

Christine Palmay

Dr. Jain, thank you so much for bringing your expertise experience, and sharing some practical approaches that we can actually start invoking in our office when those patients walk in, either tomorrow or the day after. Just a reminder to our audience that following the podcast, we kindly ask you to complete the brief reflection and evaluation survey. The survey will open on your screen as the podcast ends. Following this, you will receive a certificate of attendance sent via email. And finally, a reminder that this recording is part of a four-part series centered on the topic of osteoporosis management in primary care. Please listen to the other podcast in this series to earn one full Mainpro+ credit.