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DR. MELINDA M. LAWRENCE: So yeah, like Chris said, this definitely could be one hour on each possible group of medications, but-- want to branch further from what Dr. Maheshwari said, and go over the medication portion. And we'll breeze through and also go over the ways I think about approaching medication management for acute and chronic back pain.

So luckily, Ankit did the first couple of these, which is review different types of pain-- acute and chronic-- nociceptive versus neuropathic. It's always important to know what we're treating-- talking about the medication options for both acute and chronic pain-- briefly going over the dosing side effects and efficacy for these medications, and then a quick overview of prescribing guidelines. Because I think in the state of Ohio, and in general, that's important at this point.

So types of pain-- acute, self-limited-- patient has an injury, some disease process going on-- it's short-lasting chronic pain. Obviously, it's going to be something that is persisting beyond expected-- three to six months or more.

And then whenever I'm looking at patients-- want to put them in these two different categories or possibly acute on chronic, and then think about what exactly I'm treating. What is it? Is it arthritis? Is it neuropathic pain?-- what the ideology of the pain is, and that can help me decide what type of medication.

There's, obviously, certain medications that are going to work better for neuropathic pain and other ones that are going to work better for nociceptive or even mixed pain disorders.

If you're not a pain management physician, something that could be helpful is something called Pain Detect, which is a questionnaire. It's very quick-- one page, and basically, this can do some of the teasing out of what type of pain your patient might be having.

Obviously, there's some things that you can ask the patient-- if they have shooting pain down their leg-- shooting pain down their arm-- obviously, you're going to think neuropathic. But even other types of symptoms-- if they're allodynic, maybe even a light touch on their skin or something like this over the back or signs like that may be that there's some increased hypersensitivity going on, and maybe even a neuropathic component to their pain.

And a lot of times, patients will-- you'll see that on exam-- but this is very sensitive and specific-- if they have low-scoring on this-- 1 to 12, then it means that they have probably nociceptive pain. If it's in the middle, maybe neuropathic mixed with nociceptive, or high-scoring pain, it's neuropathic in nature.

Then you can go from there and look at the different types of medications. And so day-to-day in clinic, these are the groups of medications that I am prescribing to my patients.

Usually, some type of antidepressant, which could be tricyclics or SNRIs, gabapentinoids that include gabapentin and Lyrica-- topiramate is another type of nerve pain medication.

The first four in this group, typically, mainly treat neuropathic pain. Although, Cymbalta, which is an SNRI-type of medication-- Serotonin and Norepinephrine Reuptake Inhibitor-- is approved to treat both neuropathic and nociceptive pain. So it is approved for myofascial pain, musculoskeletal chronic pain, arthritis, and neuropathic pain. So that's a good medication option.

The hard part about these medications that treat neuropathic pain, in addition, are that they take time to work. So if you're talking to a patient who has acute pain, and you're saying, this medication's going to help you-- one to two weeks, maybe up to six to eight weeks, they're not going to like that too much. So that's where it comes into this lower portion. It's like anti-inflammatories-- Tylenol, muscle relaxers, steroids, and opioids. And we'll go through these briefly.

Tricyclics-- if your patient has neuropathic pain, the evidence for neuropathic pain is actually probably the highest with tricyclics. So a number needed to treat is three, which is lower than most of the other medications that we prescribe.

The hard part about these medications, and especially people who have chronic back pain-- a lot of them are older-- and because of the muscarinic histamine and alpha-1 adrenergic effects, people are going to have dry mouth, they have a hard time going to the bathroom, the histamine can make them sedated-- that could be a good thing, because if they have pain and they can't sleep, this could be a good medication. Prescribing a low dose at night could be helpful, but also cautious, because it could cause orthostatic hypotension or dizziness in patients.

So it might be something to be cautious of depending on the age group. It's analgesic properties-- independent from depression, so when I'm using this medication-- I'm not a psychiatrist-- I don't treat depression-- a lot of my patients happen to have it because they have chronic pain.

But we're prescribing lower doses, maybe even as low as 10 milligrams, one to two tabs at night, 25 milligrams or something like this can help with pain, sleep, and those are important things for our patients.

There's modest evidence for many different pain syndromes-- neuropathic pain, radicular pain, some evidence for even low-back pain, it's more on the low side for that, but it can be opioid sparing and even good in the perioperative period.

Serotonin, norepinephrine reuptake inhibitors-- the main one-- Cymbalta duloxetine-- and this can be good-- not as much for acute pain, like I said, because it could take one to two weeks-- up to six to eight weeks. But for a chronic patient who has pain, whether that's musculoskeletal or neuropathic, it is the only medication that's FDA approved for across the board, all those different types of pain.

It's a newer medication than the TCA is-- it works in a lot of the similar ways, but it's typically better tolerated, and has a much better side effect profile-- once-daily dosing, which is also usually helpful for our patients. And because it can cause nausea, also sedation in patients, typically dosing at night with dinner can be important to minimize those effects.

Gabapentinoids, I think, all of us, or all us spine care physicians and providers prescribe these medications-- works on calcium channels in our body, and typically there's two medications-- gabapentin starting at a low dose, typically at night, increasing-- and the pain studies, where we see efficacy typically around 1,800 milligrams a day.

So you really have to try to titrate up your patients. The hard part about this medication is that it's only absorbed in the proximal small bowel. And so you have to take a lot of it to get good relief, and you have to take it multiple times a day.

So typically, dosing it three times a day, 600 milligrams. Not everybody's going to be able to get up to that type of a dose, but there are other alternative options. There's an extended release form of this medication that could be used.

And sometimes, dose-limiting, as far as the side effects, Lyrica may give you a little bit quicker onset to see relief, and part of that is because it's better absorbed throughout the GI tract and the proximal small bowel-- throughout the small bowel. And then even in the colon, it can be absorbed. So may see sooner onset with that. And especially in the inpatient setting, or acute setting titrating up your patients a little bit quicker.

For neuropathic pain or spine-related pain, increasing dose-- high doses-- so 600 milligrams a day in divided doses, typically, two or three times a day. Topiramate-- there is some evidence for this in neuropathic pain-- pain that is radicular in nature. The hard part about this medication, also, is that it has a lot of effects on the brain. Everything that works on pain works on our brain.

And so starting at a low dose at night can make people very drowsy. Again, that could be a good thing-- if people aren't getting sleep. But it does take a while to increase. Also, it can affect other areas in our body.

People who have glaucoma or kidney stones-- it could precipitate kidney stones because it works on carbonic anhydrase. And so that's something that's not contraindicated-- it's something that people should know about and have close follow-up-- should see their eye doctor regularly if they have glaucoma and are on this medication.

The good thing about it is that unlike all the other medications we prescribe, you can have weight loss. And so generally, in people who have spine pain, we don't want them gaining more weight-- that's usually counterproductive. We want to see them lose a little bit of weight-- strengthen their core, but this could be a helpful adjunct.

Steroids and NSAIDs, as far as for acute pain, this is probably what everyone prescribes to their patients. But as far as efficacy and actually evidence-based medicine, there's really no evidence for steroids better than placebo.

So whether you give your patient a steroid pack, they go to the ER, and they get a shot, it's really not helping them that much, but placebo response maybe 30%. I mean, that's not bad.

So give them something. And for some people, they say it does help. But it could also be the natural course in the disease-- it gets better over time. This is typically not something I-- we spend a lot of time prescribing. But in primary care, you see the acute-pain patient, this may be something to prescribe.

Anti-inflammatory medications-- this is something that's helpful in acute settings, for acute low-back pain and even for chronic pain disorders, there was a recent study in JAMA looking at anti-inflammatories in chronic pain patients, for specifically, low-back, hip, and knee pain, and showed moderate efficacy and improved function versus opioids.

So better effect-- better outcomes than that. Things to be cognizant of, though, also, in elderly patients, sometimes it can precipitate GI issues, kidney dysfunction, and so those are other things-- cardiovascular events, possibly even.

Muscle relaxers-- everyone wants muscle relaxers when they have chronic pain. But as far as the evidence for it-- really short-term use-- most of the studies are with cyclobenzaprine, and really, under two weeks-- two to four days and even beyond that. When you're talking a week out from the initial onset of pain or use of these medications, the evidence goes significantly down and is no longer significant.

So for acute back pain, I think it's reasonable. But for chronic use, there's probably not a lot of evidence-based medicine from that. And once they have true spasticity, spinal cord injury, stroke-- something like this, then maybe using baclofen or something.

Opioids-- I feel this is what most people think I spend my day prescribing. But so these are an important class, and obviously, getting a lot of attention right now. Focusing in on mu, kappa, delta, we think of them as we have these sites throughout our body, but also in the dorsal aspect of the spinal cord where a majority are, which is why we use intrathecal therapy as an option like Dr. Maheshwari was talking about.

As far as for acute pain, I think it's totally reasonable for acute pain-- short-acting medication only-- not long-acting medications-- you don't want to have your patient overdose if they never-- they're opioid naive-- there's no reason after surgery or even after an acute event to put them on some type of long-acting medication.

But obviously, any time we're prescribing opioids-- and the hospital policies and the laws of Ohio, you want to follow those things-- so you have to have thorough documentation of what you're treating-- write that down and then do risk assessments for everybody. As far as chronic, short-acting and long-acting or a combination of both could be appropriate, but obviously, not first-line therapy.

You want to try other types of treatment modalities, and probably not just medication management, but also interventional procedures, physical therapy, rehabilitation, things like that. And then also, thorough evaluation-- have to see patients every 90 days, urine drug-screen contract, assessments, the works-- very cumbersome to do those types of things.

Tramadol-- I think this can be often a good medication because it works like the opioid medications. But it also works in the same way as some of the neuropathic agents. So when we're targeting pain, a lot of times, we can't just target one receptor and say, let's call it a day.

This is a medication that can target three different areas. So sometimes that can be very helpful. It's a weak opioid. It didn't use to really be anything that was scheduled-- it is now because it has such a weak affinity to morphine. It is really a weak opiate. From that standpoint-- can take up to eight tabs a day, 400 milligrams.

However, I wouldn't recommend something like that. People can still have withdrawal if they take this on a daily basis and discontinue it abruptly. But it can be very helpful for moderate pain in neuropathic and nociceptive. Opioids are good for both neuropathic pain and nociceptive pain.

Why we don't probably prescribe them so much-- there's a 52-page document-- I summarized it in these three lines for you guys. And basically, they were published in 2016. They mirror the UH policies as well as the Ohio laws.

And basically, there's not a lot of evidence outside of end-of-life care for opioid treatment-- no long-term benefits like I was saying-- randomized, controlled trial-- looking at these two different types of medications, and really, anti-inflammatory as being better or no different than.

So they also have, obviously, long-term risks associated with them. And that risk is dose-dependent. If I was thinking about prescribing to a patient, especially on a chronic basis and thinking about opioid medication, obviously, it would be not first line-therapy, but less likely to do so in a young patient-- that's where we really see opioid tolerance increasing doses. I'm sure we'll get to it later. But maybe an older patient who has spinal stenosis, they want to do a couple things a day-- might be reasonable for some low-dose opioid.

So in conclusion-- there's not a lot of great evidence for a lot of the things I do. But I would never recommend any of these things alone-- it's working with my colleagues in the Spine Institute and doing interventional therapies-- physical therapy. There's no medication I have that's going to help everything. OK.

[APPLAUSE]