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ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Differential Diagnoses for Inflammatory Back Pain

Announcer:

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This episode of Living Rheum, titled "Differential Diagnoses for Inflammatory Back Pain," is sponsored by Novartis US Clinical Development and Medical Affairs. The host and speaker have been compensated for their time. This program is intended for health care professionals.

Here's your host, Dr Ethan Craig.

Dr Craig:

Axial spondyloarthritis, or axSpA for short, often invokes in our mind the picture of a stooped patient with advanced ankylosing spondylitis. The other thing it often invokes for us is the picture of a patient that's suffering from prolonged morning stiffness involving lower back. This group of pain is called inflammatory back pain, which we'll sometimes shorten to IBP. And it's often associated with axial spondyloarthritis. But patients with IBP don't necessarily have axial spondyloarthritis, and vice versa. So in this episode, we're going to dig into this entity of inflammatory back pain, what it means diagnostically, and how to approach the workup of inflammatory back pain.

This is ReachMD, and I'm Dr Ethan Craig. Joining me to define inflammatory back pain and discuss how to approach the diagnosis of it is Dr Lianne Gensler. Dr Gensler is a rheumatologist and the Director of the UCSF Spondyloarthritis Clinic at the University of California, San Francisco Medical Center. Dr Gensler, thanks so much for being with us here today.

Dr Gensler:

Thank you for having me. It's a pleasure to be here.

Dr Craig:

To start us off Dr Gensler. How can you define inflammatory back pain for us? And how does it differ from other types of back pain that we'll talk about, like mechanical back pain?

Dr Gensler:

Yes, thanks. Thanks for asking sort of this introductory question. So, you know, inflammatory back pain, first of all, is a symptom complex. You can use it actually as an ICD-9 code, or 10 code, but it is really a complex of symptoms that suggests patients that may have an inflammatory cause for their back pain but don't necessarily have true primary inflammation. So, the features of inflammatory back pain really include those patients that develop back pain at a young age, typically before the age of 40. They have had it for a while, it usually starts insidiously, not acutely like some forms of back pain. And in patients with inflammatory back pain, their symptoms are usually more prominent in the morning when they wake up, associated with morning stiffness that lasts more than 30 minutes and gets better with exercise, or as people start to move around. In addition, some patients have pain in the middle of the night, the second part of the night, that is bad enough to wake them up and have them get up, walk around, sometimes take some over-the-counter nonsteroidals to help improve the pain. Patients often respond to non-steroidal anti-inflammatories. So, it's these components of inflammatory back pain that help to differentiate from those patients with more mechanical types of back pain.

There's a mnemonic that some people will use called IPAIN. And that really helps us remember that this is insidious, that pain may be at night, that the age of onset is less than 40, that it improves with exercise, and that there is no improvement with rest.

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Of patients with inflammatory back pain, a minority of them will have a true inflammatory cause for their back pain. And so that suggests to us that actually, this is much more prevalent in the population than just patients with axial spondyloarthritis. And so, if you look at population level data, even from the United States, you'll see that 5 to 6% of the US population will have inflammatory back pain. And, you know, 1 in 5 of those patients may actually have axial spondyloarthritis.

Dr Craig:

We do do a lot of talking about inflammatory back pain when we're discussing spondyloarthritis. So, what role does the presence of inflammatory back pain have in diagnosis of spondyloarthritis?

Dr Gensler:

Yeah, it's a great question, because we really do talk about it as the hallmark feature of axial spondyloarthritis. But yet, I've just said that it's actually not that specific. And it's, in fact, not that sensitive. And so, I do think, you know, as clinicians, it's always important to get a history, and this is one of the historical features that we can ascertain. So, in a patient with inflammatory back pain, I do think it's important that we consider, could there be a true inflammatory cause for the back pain from an entity like axial spondyloarthritis, but we shouldn't anchor so much to it that we think, 'oh, this makes the diagnosis.' It's only one part of our clinical reasoning as we're considering these patients.

Dr Craig:

And then, if we take a step back then, that begs the question, are there any conditions other than spondyloarthritis that we should be specifically considering when you see a patient with inflammatory back pain that you think may or may not be due to spondyloarthritis?

Dr Gensler:

Yeah, absolutely. So, I think you know, just common things being common. Back pain is a very common entity in patients, and certainly patients with nonspecific back pain or degenerative causes for back pain may meet criteria for inflammatory back pain without them having a primary inflammatory cause for their back pain. But there are other conditions to think about too, including patients with DISH, or diffuse idiopathic skeletal hyperostosis. And then they are more concerning, you know, diagnoses that I do think is important for us to consider, including infection, which of course is inflammatory, but for other reasons, whether it be of the spine or of the sacroiliac joints. Malignancy certainly can be at play, whether it's the bone itself or in the setting of hematologic malignancies, like leukemias. And then fractures can present with inflammatory features in particular, we'll see those as insufficiency fractures in people with low bone density or after delivery of a baby in a woman.

Dr Craig:

So, in a patient that you see in clinic that, you know, this patient, to me, has inflammatory back pain, clearly kind of fits that picture, but doesn't seem to have a diagnosis of spondyloarthritis. Maybe you look and don't see any of the other clear pathologies that you just mentioned. Do we know anything about kind of how these patients behave over time? What comes of these patients with inflammatory back pain over time?

Dr Gensler:

Well, it's a hard question to answer because it assumes that you have complete follow-up on patients that present with inflammatory back pain. So, I think any publications that look at this, or any studies that really look at this are going to have some bias associated with them.

Dr Craig:

So, Dr Gensler, if we look at a specific example then, how would you approach say, a patient that has inflammatory back pain, and is found to be positive for HLA-B27, but doesn't have any other apparent features, at least, of axSpA?

Dr Gensler:

Yeah. So, when you have those 2 features alone, inflammatory back pain and HLA-B27, then you can think about what is the probability of having the diagnosis of axial spondyloarthritis. And so based on sensitivity and specificity, and then likelihood ratios, you can actually create a likelihood product and convert that to a probability. And so, with these 2 features alone, the probability of having a diagnosis of axial spondyloarthritis is 59%. So, it certainly is high enough that you should be asking other questions and making sure that you've ascertained all the data necessary to really make sure you can diagnose or rule out a patient with axial spondyloarthritis.

So, what you're asking here is when you don't have any other features, and then my question back would be, 'Well, have you collected

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all the features you need, the data that you need to really determine whether the patient has a diagnosis?' And so, a lot of the data that is necessary here is really imaging data. And you know, x-ray, we know is poorly sensitive, and actually terrible with regards to precision. So, if you do an x-ray, and there's even controversy as to whether that should be the first imaging study, and that's negative, you really do need to go on to an MRI to determine whether the patient has sacroiliitis, which would confirm the diagnosis for you.

However, even in the presence of a negative MRI, so you do the imaging workup, you ask all the relevant questions, and all you're left with is inflammatory back pain and an HLA-B27 test, then the question becomes, well, if the patient doesn't have the diagnosis today, number one, what explains their symptoms? And then, number two, could they be in a preclinical state? And I think it's really important to consider that, particularly in young patients that may just not have fully evolved yet to a clinical picture, because they will be at risk in the presence of these 2 features of going on to develop axial spondyloarthritis, and it may take active monitoring of them to make sure that they don't evolve.

So, I think we need to be careful as clinicians in saying, "You do not have a diagnosis. And you can be on your way and live your happy life," especially in a young patient that may still be at risk.

Dr Craig:

One thing you've outlined previously is really some of the strengths but also a lot of the weaknesses of the concept of inflammatory back pain and its limited sensitivity and specificity. So, if you're thinking about non-rheumatologists, do you see the concept of inflammatory back pain having a clear role for non-rheumatologists in picking out people to get to us?

Dr Gensler:

Yeah, I mean, I always see a role in getting more of a history. A lot of our diagnosis comes from history alone. And so, this is a cheap test just to determine the features of a patient's type of pain. And at least lets us then consider our differential diagnosis as we're considering the reasons for the patient's inflammatory back pain.

So yeah, especially, I think there are certain providers that are seeing patients for back pain in particular, or musculoskeletal conditions, so sports medicine, orthopedics, primary care, these are easy questions to ask and then may allow us to ask additional, more specific questions or go on to testing that has healthcare cost and utilization implications that we shouldn't be doing in everyone. So, I think it does help refine our differential and allow us to then go on to additional tests. And it's cheap.

Dr Craig:

And that's a great way to round out our discussion on this topic. And I really want to thank my guest, Dr Lianne Gensler, for sharing her perspectives on inflammatory back pain and its role in diagnosing spondyloarthritis and other conditions. Dr Gensler, it was great speaking with you today. Thank you.

Dr Gensler:

Thank you.

Announcer:

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