

[MUSIC PLAYING]

RAYMOND PAN: Good afternoon. I'm Dr. Raymond Pan. I'm a psychiatrist at the UPMC's Sports Medicine Concussion Program. I'm also an assistant professor in Department of Psychiatry here at University of Pittsburgh.

Today I'm going to be speaking with you about the role of psychiatrists in concussion management. We have a concussion program at sports medicine program involving many faculty members. And I just wanted to talk to you today about the piece that I provide as one of the team members in the sports medicine concussion program.

So first of all, I want to say that I have no disclosures to present. And one of the things I'll talk to you about is medication management. Unless I say that a medication is off-label, it is used for the indication that is FDA approved.

OK. So the objective to this talk is the diagnosis of psychiatric disorders and the fact that we try to diagnose them early after the concussion. The next one is the psychiatric symptoms associated with concussion. We'll talk about appropriate therapies. And then we'll talk about the role of medication in the treatment of the symptoms.

Now, people with concussions come from all walks of life. So people that suffer from concussions may have various psychiatric risk factors. So one of the psychiatric risk factors, of course, is a previous history of any psychiatric illness, including anxiety, depression, ADHD, or other psychiatric disorders.

Another risk factor is the presence of any previous history of learning difficulty or learning disorders. Also, a family history of any psychiatric illnesses, a history of sleep disturbances earlier in their lives. And also the history of any associated symptoms, such as migraine headaches, visual disturbances, and carsickness.

When we think about concussions, we think about interplay of several symptoms. So after a concussion, there could be cervical injury, post-traumatic migraine headaches, cognitive difficulties, ocular or visual disturbances, and vestibular or

balance issues.

And one of the symptoms that are associated with concussions are anxiety and mood. So that's the piece that I focus on. But, again, it's interplay of different symptoms and different experts that address those symptoms.

Now, let's talk about anxiety. Anxiety for a lot of people is worry. And after a concussion the big question is, am I going to get better? And for a lot of people, of course, concussion symptoms persist longer than what people expect or uncomfortable with.

So people would say to you quote, "the day of the concussion everything changed." And they talk about changes in their work, school, and sport. They start having-- a lot of times people who have concussions are athletes. Or they could be highly functional people that injure their head as a result of a motor vehicle accident and such.

But oftentimes, the people we see are very accomplished individuals. And so for a lot of the people we see, previously they had little doubts about their abilities or their ability to master their line of work. But after the concussion, a lot of times people have thoughts about whether they could do their work or play their sport as well as they could before they hit their head.

And so a lot of times these thoughts are persistent. So people have these persistent thoughts, or we call ruminations. And then a lot of times people are anxious. Or after the concussion their anxiety shows itself as nervousness.

So one thing I want to highlight is the link between vestibular injury and anxiety. So elevated anxiety accompanies vestibular symptoms. So this has been shown, not only in people after a head injury, but also in animal models. And the animal symptoms link vestibular symptoms to distress response, which contributes to panic anxiety.

And this is the stress response people are often familiar with from popular literature or from college science as quote, "fight or flight"-- fight or flight. So the improvement of the vestibular symptoms leads to corresponding improvement in anxiety.

And in addition, we get mood symptoms. And a lot of times, as a result of inability to function at the level that people were functioning in their line of work or their sport before they hit their head, people a lot of times have depressed mood. And sometimes people will say that they're on edge, irritable, or easily angered.

So, in behavioral health we have the concept of major depression. And major depression is a DSM-5 diagnosis. But it involves nine symptoms. So I'm going to highlight those.

One of the symptoms is sleep is poor, or oversleeping. In other words, they have difficulty falling asleep, staying asleep, or they're sleeping too much. They lose interest in their activities-- feel like that they don't want to do things that they used to or they have to do, such as getting groceries.

They get guilt or worthlessness feelings. They feel guilty that they cannot function at the level they previously could function. They have a lack of energy. They talk about being tired all the time or wanting to lay down.

They have difficulty concentrating. And sometimes I've had people say that their memory seems to be impaired. They start eating less, or not feeling like eating. Or on the other hand, sometimes people, because they're despondent, would eat more.

People will sometimes feel sluggish. This is what the concept of psychomotor retardation-- or they can feel on edge. And that's psychomotor agitation. And sometimes people who have mood symptoms would have suicidal thoughts-- thoughts like they wish they were not alive, or that because of their situation that it's better that they aren't alive.

So if they meet four of those criteria then-- I mean, rather they meet five of these criteria, then that would, over a two-week period of time, that would usually be a clue for major depression.

And one of the things I did add on the slides is that those symptoms that I mentioned previously that are especially common after a concussion is the difficulty sleeping, the low energy, and difficulty with concentration. And I italicize those in those slides.

So in terms of psychiatric treatment, if somebody has symptoms of anxiety, symptoms of depression, how do we treat that? Well, for many people who have never had any history of depression, anxiety, or family history of any depression or anxiety, much of those symptoms are associated with the symptoms of concussion. So for the majority of people, when the concussion symptoms get better, the psychiatric symptoms, or the depression or anxiety symptoms, get better also.

So step one in treatment of psychiatric symptoms after concussion is adherence to the therapies involved in treating concussion. And that should be exercise and exertion therapy. It could be ocular therapy, vestibular therapy. And I just wanted to highlight, of course, ocular therapy is if people have difficulties in their vision. Vestibular therapy is difficulties with balance.

And also, getting up and doing things which we call quote, "living life." In other words, some of the things that are difficult to do-- and this involves symptoms of exertion, ocular and vestibular-- are simple tasks like going to the grocery store or fixing dinner. And so those are things that we encourage people to continue to do.

In addition to the usual therapies involved in concussion treatment, we encourage people to have a therapist. So therapy is a good tool to treat mood anxiety symptoms. I'm going to highlight one particular therapy that's often used. And it is called the structural therapy. So I walk through this one example of a therapy, and that's cognitive behavioral therapy.

So the concept of cognitive behavioral therapy is that thoughts influence feelings and behaviors. So this is especially important in management of concussion because one of the persistent thoughts is not getting better after the concussion, or that the injury is quote, "the new normal."

So what we do know is that people recover from concussions. And so the symptoms will get better. So this idea of not getting better is an example of a negative thought or a thought distortion.

And so, one approach is to have the patient who's suffering from the concussion to get a notebook, or nowadays people like to take notes on their cellular phone-- to write down those negative thoughts they have during the day. And during the

session we'll review their notes, and point out which thoughts that they have that might be a thought distortion, and to challenge those. And of course, to work with the patient to identify if, in fact, it is false or a thought distortion.

And then another approach to treatment of depression and anxiety is antidepressant medications. Now, I want to highlight that this is the third treatment. So we talked about the usual concussion care, including therapy such as exertion therapy, exercise, ocular therapies, and vestibular therapies. We talked about psychotherapy. So another helpful treatment, but not the only treatment, is medication treatment.

So some of the common medications that are used for both depression and anxiety is selective serotonin reuptake inhibitor, or sometimes people know these as SSRIs. And these are medications that are very common and are used to treat depression and anxiety. So one example is sertraline, which is otherwise known as Zoloft as a brand name. Another common one is fluoxetine, which is otherwise known as Prozac.

But these medications, although they're are very commonly used, both in the primary care setting, as well as by us psychiatrists in the concussion clinic, are common. But they're not the only treatment. So we find that there's other medications that are helpful, too.

So one's the selective serotonin norepinephrine reuptake inhibitor. And that's a lot of words, but what that indicates is a medication that acts on two brain neurotransmitters, in addition to the serotonin that the selective serotonin reuptake inhibitors address. It also involves norepinephrine. And we think that depression involves more than one neurotransmitter.

This medication is especially helpful for people with headaches. Because we find out that a pure medication with only serotonin oftentimes, or could, increase the severity of the headaches. So oftentimes, this so-called dual agent, with both serotonin and norepinephrine, is helpful with people with a lot of headaches, in addition to their depression and anxiety symptoms.

In addition, there are other medications that are helpful. One in particular I want to point out is bupropion or what's a norepinephrine dopamine reuptake inhibitor.

Again, these are two other neurotransmitters-- norepinephrine and dopamine. And both these neurotransmitters address some of the common symptoms that we see after a concussion, and that is low energy and poor concentration.

In fact, bupropion is often used off-label for attention deficit hyperactivity disorder, or ADHD. So it helps with concentration. And common stimulants interact with the-- are used to calm-- they use the neurotransmitter, dopamine. So it will help with energy.

So a couple of cautions with using bupropion. One is that it slightly lowers the seizure threshold. So it's often avoided in people with seizure disorders. And second of all, it's often used to help people quit smoking. In fact, bupropion acts on an area of the brain that nicotine acts on, so it is to be avoided in cigarette smokers. On the other hand, people who are willing to, or want to quit smoking cigarettes, this medication could be helpful in that way as well.

So about medication treatment-- so people are usually hesitant about psychiatric medications. So what we tell people is that one, medication are temporary. As I said before, people recover from concussion symptoms.

So the focus on medications is to address symptoms that are severe enough to impede recovery. And so what that means is that people who have symptoms, such as difficulty with their energy, concentration, and others that do not allow them to comply with the level of activity that they need to be involved in or participation in their therapy, such as vestibular therapies.

So we use medications to address those symptoms so that people could be active, be compliant with their therapies in the recovery of their concussion. And ultimately, that helps speed the recovery.

And so one of the things that we think about when we talk about medication treatment is how are they doing in the things that they have to do. For instance, if after the concussion, if they have symptoms that interfere with their school and work, then we would consider medication treatment. Because oftentimes, it is important for people to resume their lives. Patients tell us that resuming their lives makes them feel better.

So medications are important. But again, I want to highlight the fact that the best treatment are both psychotherapy and medications. So these therapies are not mutually exclusive. You could actually do both. And the gold standard in psychiatric treatment, in fact, is to be involved in both psychotherapy and medication treatment.

And finally, it's important for people to continue their concussion treatment, to be involved in their activity day in, day out, as well as their therapies here at the concussion program. So again, it's a team approach. So treatment of the psychiatric symptom is one piece. It's oftentimes an important piece. But it's in concert with the other therapies and treatments.

So this is the end of my talk. I appreciate your attention. Please consider encouraging your patients in addition to getting treatment in their concussion, that if they need treatment for behavioral health, that they get that treatment. Again, we offer behavioral health treatment co-located in the Concussion Clinic at Sports Medicine Concussion Program.

Thank you so much.