Week 5 - Cannabis, Opioids and Pain

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00:00

And then I'll turn it over. And then also Dr. Khan if you want to introduce yourself.

00:06

Hi, I'm Mashal Khan. I'm a psychiatrist here at New York Presbyterian Weill Cornell. And today we'll be going I'll be going over the cannabis related questions.

00:19

Perfect. As a reminder, I know most folks have already attended a couple of these, but we'll go through the practice questions. And if you have well, as we go through them, please enter your answers through the chat. And we'll read them out loud. And if you have follow up questions or additional questions about the topic, feel free to either unmute yourself and join in on the conversation or to just throw them into the chat and we'll read them out loud to you. We'll do the cannabis questions first and then we'll shift over to opioids and pain. So with that, I'll turn it over to Dr. Khan to get use started.

00:49

All right, folks. So let's start with our first question of the day. So the question is marijuana is listed under which of the following federal controlled substances schedules? Is it A- schedule one, B- schedule two, C- schedule three, or D schedule four? Please add your answers to the chat function.

01:17

I'm seeing a lot of confidence in A's coming through the chat.

01:23

Seems like every- there's a strong consensus around schedule one answer A. Are we good to move forward with the answer? Great. Yes, indeed. Every one is on the on the money with this one. Yes, it is schedule one it is in the same category as heroin, LSD, ecstasy, methaqualone and peyote. This scheduling of substance drugs is reserved for ones that are considered to be at very high risk of abuse with no recognized medical use in the US. There's a lot of advocacy to change that even though- but at a federal level it still remains at this scheduling for now.

02:22

All right. So which of the following are subjectively reported effects of cannabis: A- decreased sexual desire? B- increased appetite C- decreased tactile- tactile sensitivity or D- auditory hallucinations.

02:49

Of course a lot of strong responses in favor of B looks like indeed, we've all identified the munchies very well. B- increased appetite is the right response. Users of cannabis do report increase- an actual the opposite of what's option A- sometimes there's an increase in libido, increasing tactile sensitivity. There are reports of some visual distortions or visual hallucinations as well. And the most commonly reported symptom or side effect is the effect is the increase in appetite which is often referred to as the munchies.

03:41

All right, which of the following cannabinoids has been shown to have anti epileptic activity for children with Dravet Syndrome? Answer A is tetrahydrocannabinol. B Cannabigerolic acid. C- tetrahydrocannabivarin and D cannabidiol. We have a lot of

04:20

A lot of confidence on the Ds and a tongue twister of a question.

04:24

I know I know. And the answer is indeed cannabidiol. A lot of clinical trials that compare THC and CBD have shown greater effectiveness in reducing seizures with CBD especially in Dravet Syndrome. This is a very unique seizure disorder that is found in the pediatric population and formulations of cannabidiol are actually used as, as treatments for Dravet Syndrome. What's also noteworthy here is that this theme of question is something you're going to get a few times during your exam where they're going to give you similar sounding molecules or answers to trick you. So, a great job on recognizing cannabidiol.

05:28

Alright, so among 12 to 17 year old students in the US the following trends is seen in the past five

years. A- no use of synthetic cannabinoids. B- less use of synthetic cannabinoid C- the same amount of synthetic cannabinoid use and more- D- more use of synthetic cannabinoids.

05:58

So, folks are more in favor of option D. Okay. Just want to point out that this is with regards to synthetic cannabinoids. Unfortunately, guys, the answer is B. There's been less use of synthetic cannabinoids over the past five years. Synthetic cannabinoids were actually quite popular or were more prevalent, the use of synthetic cannabinoids was more prevalent in the 20-teens. And then, you know, regulatory bodies became more aware and there was a huge crackdown. And as we, you know, near the end of that decade, the they almost sort of died out for a little bit. But there's a new there's sort of an uptick, again, but not enough to match up past trends. But it's still sort of lowly still there but not not as prevalent as it used to be in the 20 teens. So especially in this population, the key is amongst teenagers it is it is it is definitely dropped off. Back then it was being marketed towards kids with packaging, with a lot of animation on top such as Scooby snacks and, you know, different anime figures on top. So it did attract kids. But there has been a huge crackdown.

07:33

My next question. Which of the following medications has a trial supporting efficacy in cannabis use disorder? A- n-acetylcysteine, B- baclofen, C Corp typing, D- mirtazapine.

07:58

Seems like everybody is in favor of the answer a The answer is indeed a. N- acetylcysteine has a lot of evidence in support of its role in treatment of cannabis use disorder, but only amongst adolescents. Trial of in adults using over with cannabis use disorder demonstrating no benefit with N-acetylcysteine. It's important that it actually improved their- so it reduced their use of it- reduced the use of cannabis amongst adolescents that were initially not as motivated, motivated towards cutting down on their cannabis use was what the studies or observed observation concluded on.

08:54

Alright, which of the following trends in the in youth from the from the Monitoring the Future study about marijuana use and perception of harm is true? A- since the early 1990s, the percentage with perceived risk of harm from marijuana has been higher than the past year of mar- use of marijuana. B- since about 2009, there has been a growing gap between decreased perception of harm and increased past use of cannabis. C- the lowest past year of cannabis use was in the late late 1970s and D- the perceived risk of harm for cannabis fell through the 1980s. Lots of people favor of option B.

09:57

And yes, Monitoring the Future has indeed demonstrated that since 2009, there has been an increased use of marijuana with a decreased perception of harm related to marijuana use. Thus widening the gap between perception and harm. Option A is obviously incorrect because the

perception of our harm is falling. Option C is also incorrect because the use is rising and D is also incorrect since the perception of harm did not fall until 2009. All right, so, next question.

10:37

Which of the following correctly lists reported severe adverse effects of acute synthetic cannabinoid use? A- blindness seizures and psychosis, B- seizures, psychosis and acute cerebral ischemia, C- seizures, psychosis and blindness, D- acute cerebral ischemia, severe rhabdomyolysis and blindness

11:15

Lots of folks in favor of option B. You guys were paying attention weren't you? Great, nice. All right, yeah, the use of synthetic cannabinoids has indeed been associated with the severe adverse effects and these include seizures, acute cerebral ischemia, psychosis and rhabdomyolysis- myolysis as well but blindness has not been one of them so far.

11:50

So alright, um, which, which one of the following is as a FDA approved for treatment of cannabis use disorder? Option A- Lofexidine, B- Varenicline. C- there are no FDA approved medications; D- there are no FDA approved medication approved treatments for a cannabis use disorder evidence is building for some benefit from certain medications like n-acetylcysteine.

12:26

That's a consensus around option D. That is very correct. And as we mentioned in a previous question, the the utility for n-acetylcysteine is very much limited to the adolescent population. But there are other medications that you know there's a lot of evidence building in favor for example, Gabapentin in certain phases of marijuana withdrawal.

12:58

Next question, which of the following symptoms would be unexpected in a patient experiencing cannabis withdrawal? A difficulty falling asleep. B visual hallucinations C irritability D dysphoria.

13:28

For a moment there is nobody responding... Alright are you guys using chat GBT? This is an abnormal number of correct responses, guys. All right. Yes, you are indeed correct. Hallucinations are not a symptom to be expected in the cannabis withdrawal people have reported experiencing of visual hallucinations during the intoxication phase, especially when it's very potent. And yeah, but not in the withdrawal phase.

14:05

All right. Next question. You are seeing a 17 year old gentleman with a moderate cannabis use disorder which of the following medications is shown efficacy in the treatment of cannabis use disorder in the age group when using with contingency management?

14:28

Sorry about how repetitive this question or or this is, but yeah, there's just a general paucity of information regarding the treatments for cannabis use disorder. But there was one pilot study in adolescence that demonstrated the efficacy of n-acetylcysteine over placebos in achieving abstinence from cannabis in- with patients that had a moderate to severe use disorder receiving contingency management. There's some evidence as we mentioned a few times this study was replicated in adults but did not have the same outcome in comparison to placebo, and none of the other pharmacological options have been studied or have shown efficacy in cannabis use disorder. And as I also mentioned previously, gabapentin, which is not included as a potential answer here was also demonstrated to have some efficacy in decreasing cannabis withdrawal symptoms in decreasing cannabis withdrawal symptoms and improving outcomes in patients with cannabis use disorder.

15:42

All right, next question. Which matrix is least reliable in detecting cannabis use in an occupational testing program?

16:15

Oh, so some disagreement in the responses Finally, I'm assuming your chat GBT stopped working guys. Good. The answer is, is D- blood. Urine collected via secure means is a very reliable body fluid for detecting chronic daily THC use here. It can also be reliable particularly related to chronic use. Saliva detection can also be very consistent. Our blood does not retain the fat soluble THC molecules well, and therefore is less useful in occupational testing, as it pertains to THC, especially.

17:09

All right, next question. Um- a 29 year old is starting treatment for an addiction to multiple substances. He has a history of using heroin, marijuana, alcohol, methamphetamines, and cocaine. After five days of abstinence, which of the following substances is most likely to be detected in urine after five days of stopping? Right? So A- alcohol, B- cocaine, C- heroin, and D marijuana?

17:41

All right, I get it. We're talking- our question answers are about marijuana. So the answer must be marijuana. All right, on that lovely note, guys. Just FYI, just to explain this a little bit more with with occasional recreational use, people can test positive for anywhere between three to seven days from, you know, episodic use. But with chronic and chronic users, or people that tend to use more

frequently. They tend- they can test up to four weeks or longer. In some occasions. It's because THC is a very lipophilic molecule, it stores in the body fat. And when people go through their planned-, you know, they start their abstinence, there can be a phase where there's fat breakdown, and that gradually releases some of the THC back into the bloodstream and eventually it's filtered out through urine. And so a lot of individuals can test positive for over four, four weeks and sometimes even longer than that, depending on the conditions they have. On that note, please feel free to reach out with any questions you may have. That's all for me. Thank you.

19:30

Oh, you're muted.

19:48

I'm sorry, I didn't unmute myself. My name is Dr. Salsitz and we'll be switching to the topic of opioids and pain and addiction. And before I start on In terms of the opioids, it's really been an incredible situation. This opioid epidemic is going on about 30 years now, starting with the prescription opioids then segwaying into heroin. And then the third wave is fentanyl, which was we're in now. And the fourth wave is the cocaine and methamphetamine problem on its own and also being contaminated with fentanyl. So it's really been a long time that opioids have been have been such a big problem.

20:36

Okay, so first question is cocaine related convulsions related to meperidine toxicity is most often related to: A- accumulation of normeperidine? B- central nervous system depression, C- concomitant use with benzodiazepines and D- concomitant use with barbiturates? See what I can see. Okay.

21:06

I'm not seeing it- it looks like most people are saying, A.

21:17

Yeah, so A is the correct answer. I'm even wondering if many if everyone on the call if you're all relatively young, know what meperidine is. The brand name was Demerol. And it was a very, very commonly used, opioid may be the most commonly used opioid in the hospital postoperatively. But because of this accumulation of its metabolite normeperidine, which is a neuro-excitatory metabolite which can cause seizures. I don't think people are using meperidine very much at all. So B would be wrong, because it's the opposite of what this metabolite was causing, and concomitant use with benzodiazepines, you know, could but it's not as good an answer as the accumulation of normeperidine. And the same thing with with answer D.

22:09

Actually, this whole problem with meperidine and seizures, resulted in this famous Libby Zion case in New York City many, many years ago, which then resulted in a decrease in hours that residents are allowed to work. And so this was actually a very interesting and important case or important issue in the history of medicine. There are not many opioids which are associated with seizures. Another one is Tramadol, both in intoxication and in withdrawal.

22:43

Which of the following is a direct effect of opioids on the mu-opioid receptor? 1- diarrhea, A- diarrhea, B- analgesia, C- increased respir- respiration, and D- pupillary dilatation.

23:05

I'm not seeing that in my chat Giulia, so you're going to have to tell me what- B so far, B is the common as the most popular one and B is the right answer. So kind of a very simple question, but, you know, on the exam, besides some more esoteric things they might ask, they are looking for very basic information about each drug, which which receptors do they bind to? And what are the basic properties of the drug both both in the intoxication stage and the withdrawal? And so some questions may be very basic, just like this. Diarrhea is incorrect because opioids are sometimes used to treat diarrhea. And as you know, one of the major deleterious effects of opioids is decreased respiration, and pupillary dilatation occurs in opioid withdrawal, not when the opioids are interacting with the mu receptor. So analgesia is the main indication for the use of opioids.

24:10

The most common adverse reaction to consuming constant large amounts of oxycodone combined with aspirin on a regular basis is A- a skin rash, B- excessive sedation, C- gastritis with gastrointestinal bleeding, and D- fluid retention.

24:32

We are seeing some confidence in Cs in the chat.

24:36

Well, that's really good, because the question you know, is a little bit a little bit out of the mainstream. And aspirin as you know, is an NSAID. And when people take large amounts of oxycodone, combined with aspirin, although that formulation is certainly not as common as oxycodone combined with Tylenol, when I first read the stem of the question And I thought it was going to be about Tylenol and and hepatic adverse effects of Tylenol on the liver, but indeed it's aspirin and so gastritis with gastrointestinal bleeding is the best answer on that one.

25:17

Okay. Which of the following has been documented to reduce the risk of an opioid overdose: Provision

Okay. Which of the following has been documented to reduce the risk of an opioid overdose: Provision of naloxone, Good Samaritan laws protecting persons with an overdose and the rescuer, prescription take back programs, prescription monitoring programs

25:44

lots of As.

25:46

Lots of As. Well, A is the right answer. And we know that naloxone is a short acting opioid antagonist. And really the Naloxone harm reduction provision of naloxone to people who use opioids, both both for the patients the families has really had a dramatic impact on opioid overdose deaths and reversal with Naloxone has become a mainstay in the harm reduction field and just in generally with opioids. As you know, the most common formulation now is the Naloxone nasal spray. And the most common formulation in that category is the four milligram nasal spray. There has been a lot of discussion about how much naloxone is needed since fentanyl came around. And there's a debate about whether fentanyl overdoses require either a higher dose of naloxone, you know, in total, or more often administrations of naloxone.

26:54

And it's an unsettled issue, because it depends on where the naloxone is being provided. When it's provided in the emergency room, where the patient is hooked up to monitoring you know what the O2 sat is, you know, the vital signs, you can give relatively small doses of Naloxone and try not to put the patient into opioid withdrawal by removing all the opioid from the opioid receptors. Whereas if you're out on the street, and you're a lay person, and somebody is sedated, you know, you want to get them awake and you probably would be using more Naloxone, so it's an unsettled issue. And as these newer opioids come along, like like the nitazines now, people are also asking, will Naloxone be sufficient will we need more Naloxone, and I believe that the FDA has recently approved a naltrexone I think, again naltrexone nasal spray. naloxone is very short acting, whereas naltrexone would provide a longer degree of antagonism in case people slip back into a and into the overdose.

28:02

Good Samaritan laws have been very important so that people are not afraid to call the police or call an ambulance and not worried that if the drug paraphernalia is going to be found on the scene, they might have, they might be liable or be arrested. The prescription take back programs are very important. What drove the prescription opioid epidemic was that people would never throw away their their their prescription opioids after they say got a 30 day supply after the surgery. And they just left them in the medicine cabinet. So people are advised now to dispose of them in a number of different ways. But one way is that the DEA has these prescription take back programs. And you can just bring all your prescriptions including opioids, and dump them into a big barrel and they take it away. The PDMPs have been around now for probably a little over maybe 15 years or so in some of the states and it has resulted in a decrease in overdose deaths. But again, not as significant as the provision of naloxone.

29:11

Which of the following is true of opiate intoxication assessment? Mitragynine, mitragynine use will produce a positive opioid immunoassay test. 6-Monoacetylmorphine persists for three to five days in the urine. High levels found on toxicology testing, with a relative absence of obvious physical impairment are a strong indicator of high levels of tolerance. The 18 item brief symptom index has shown to be a powerful predictor of opioid withdrawal risk. I'll give you a few seconds here to pick the choice you think would be best.

29:55

So far, some B's and C's,

29:58

B's and C's.

30:00

but not a lot of answers, which indicates not a lot of confidence.

30:04

Right, right. Right. Okay. Well, this is a interesting question. I'll tell you, I've taken many, many multiple choice questions in my day. And, you know, sometimes you do have to guess you just don't know for sure. The longer the answer, the more text that's used for the answer. I believe that there might there's a greater likelihood that that could be the correct answer. Because it's very hard to make multiple choice questions, by the way, to come up with good choices that that seem like they're right, and they're not. But when people spend a lot of time with a lot of text, often it's the right answer.

30:46

So let's go through what the answers are here. Mitragynine is the is Kratom is the main psychoactive compound, or the main plant alkaloid in kratom. And it is an opiate agonist and we just had a case in my hospital of somebody using lots of kratom on a daily basis, and she she developed opioid withdrawal which we treated with buprenorphine. So mitragynine is kratom. And that will not produce a positive opioid immunoassay test. Kratom I don't think has a point of care positive test yet, and would have to be sent out to a lab.

31:25

6-Monoacetylmorphine is the first metabolite of heroin. So heroin, which is produced from morphine,

found in the opium poppy plant. And the reason that the drugs- the drug dealers take the morphine out of the poppy plant, and produce heroin by putting two acetyl groups on the heroin. So another name for heroin is diacetylmorphine, is that it makes it more lipophilic. So heroin gets into the brain faster than morphine, but is rapidly within hours, one or two hours converted to this intermediate metabolite called 6-Monoacetylmorphine. So three to five days is way, way too long. If you do pick up 6-Monoacetylmorphine, which you can do on an immuno assay, it indicates very recent use of heroin. The other important thing about 6-Monoacetylmorphine, is that it is pathognomonic for heroin, nothing else will break down to that metabolite, and it rapidly breaks down into morphine. So generally speaking, if you're doing an immuno assay, you're either gonna get with heroin, you're gonna get a positive opiATES- A T E S, not opiOID, or you're going to get morphine and or codeine, both of which are found in the opium poppy plant.

32:47

C is correct, because if you find a high level of any drug, whether it's alcohol, opioids benzos, and you don't have any or a lot of physical impairment, it indicates that the person is tolerant to that drug that they've used it for a while consistently, and they're not showing the pharmacodynamic effects of the drug.

33:09

I'm going to be honest here and say, I'm not familiar with the 18 item brief symptom index. But apparently it's not a powerful predictor of Opie- of opiATE withdrawal risk. I want to make sure you all know the difference between opiATES- A-T-E-S and opiOIDs. Opiate is only morphine, codeine from the opium poppy plant. Even even heroin is not technically an opiate, although it screens that way, because it's actually a semi synthetic opioid, because the morphine has been changed to heroin. So opiates generally refer refer to only morphine and codeine and opioids refer to the entire class.

33:52

Okay, which of the following statements are consistent with the CDC guidelines for prescribing opioids for chronic pain, published in 2016, and updated in 2022: non pharmacologic therapies should be first line treatment. When initiating opioid therapy, extended release long acting opioids should be prescribed, not immediate release opioids. For acute pain limit opioid treatment duration to greater than 30 days. Coprescribing opioids and benzodiazepines is a safe practice. I think most of you are going to get this one correct.

34:34

We have most A's and then a couple of B's.

34:38

Yeah. So um, so A is the answer. And I would say it's it is important for you to know that there were these two guidelines published on on safe and reasonable opioid prescribing- chronic opioid prescribing for chronic non-cancer pain. The first one published in 2016 was really of urgency because

prescribing for chronic non cancer pain. The first one published in 2016 was really of urgency because we were still at the tail end of the prescription opioid epidemic where, unfortunately, many, many providers were not prescribing appropriately. However, there was some problems in that 2016 guideline. It was a little bit too restrictive. And it had the result where providers just said, Okay, I'm not going to prescribe opioids anymore. And they had patients who were on it for many years, physically dependent, and they sort of cut them off abruptly. And those people had no place to go except to the illegal drug market. And heroin was cheaper and more available at the time. And that was in 2010. And that was that resulted in a heroin epidemic, which lasted about two or three years and then segued into the fentanyl epidemic.

35:53

So they redid the guidelines in 2022 and made certain changes to the guideline. For example, they made it clear that you could prescribe judiciously and it didn't mean that you were doing anything wrong. You shouldn't cut people off. You should be very careful when you taper down. And if the patient's not tolerating it then do not continue the taper. And so they soften some of the restrictions that were in the 2016 guideline. However, in both guidelines, they continue to say non pharmacologic therapy should be first line treatment. And the non pharmacologic treatments include most commonly physical therapy, meditation, apitherapy, massage, tai chi, acupuncture, things like that. They recognize that these therapies are not easy to access. Often insurance doesn't pay for them. However, they still recommend that these should that this should be first line therapy.

36:55

Second line therapy is non opioid pharmacotherapy, pharmacologic pharmacotherapy, things like acetaminophen, the NSAIDs, some of the topical things like lidocaine patches, there's NSAID- the topical ointments now. And then when you get to it would be would be opioid therapy, and then B when you start opioid therapy, in the guidelines, they recommend always starting with immediate release opioids, since there are less milligrams of the opioid, in the IR formulations generally, than in the extended release opioid class. So always begin with IR, you may have to shift to extended release with chronic dosing.

37:39

For acute pain, the guidelines suggest less than seven days often less than three days. And many states and EDs limit the amount of acute opioids you can prescribe. And it is generally not a good idea to prescribe opioids and benzos. Since they're both CNS depressants, they both have black box warnings about that issue. You can do it but again, it's got to be done very carefully and judiciously. But generally, it's not recommended that you do.

38:10

Just a little parenthetical remark, and that is that the FDA said what I just said about the opioids and the benzos when it comes to pain, but when it comes to treating opioid use disorder, when people are good candidates for either methadone or or buprenorphine, the FDA says Do not let the use of

benzodiazepines hold you back from prescribing both either either methadone or buprenorphine. The risk of overdose is greater than the risk of that interaction.

38:41

Which one of the following signs or symptoms is not present in a patient who presents with an opioid overdose? Okay, small pupils, needle marks, increased respiration or coma. I have a feeling most people will get this one. Correct.

39:02

Yeah, already have lots of C's in the chat.

39:04

Yeah. So this is a kind of an easy one. But again, don't think that they won't ask you some very basic questions that you might think is too basic. It could be on the exam. So the the classic triad of an opioid overdose is coma, sedation, meiotic pupils and decreased respiration. That's the classic triad. That's how it usually presents. So meiotic pupils, needle marks of people who are IV drug users, although they could be you know, they could be using heroin by by by intranasal use and not have needle marks, but they could have needle marks and coma is a characteristic of an opioid overdose.

39:48

A pregnant woman who was being maintained on methadone, 100 milligrams per day for the past three months. presents for prenatal evaluation at 12 weeks of gestation. She is interested in switching to clonidine for treatment of her opioid use disorder, which of the following is true? Clonidine is cross-tolerant with most opioids. Clonidine relieves nausea and vomiting of opioid withdrawal. Clonidine is essentially active alpha-2 adrenergic agonist. Clonidine is essentially active alpha-1 adrenergic antagonist

40:30

We're getting a lot of C's, yep, lots of C's in the chat. C's. Okay. So that's good, because C is the only the only true statement. It's an unusual stem. The stem for this question is very unusual. And I don't think you would see it on the exam because clonidine is not an approved treatment for opioid use disorder. It's used off label, sometimes to treat opioid withdrawal. I'm sorry, I can't stop the phone from making that noise.

41:00

So clonidine is not an opioid therefore, it does not cross tolerant with any opioid. It relieves some of the hyperadrenergic signs and symptoms of opioid withdrawal like hypertension, sweating, tachycardia, but it is not good at relieving things like nausea, vomiting, and particularly not good at

relieving arthralgias and myalgias. So, generally it should be used as an as an as a, as an adjuvant kind of medication. Not primarily unless you cannot use cloni- unless you can't use methadone or benzodiazepines. But those two drugs are the preferred drugs to use for opiate treatment and opioid withdrawal.

41:43

It is essentially active alpha-2 adrenergic agonist that's true. And even though it's an agonist that results in decreased norepinephrine release from the locus coeruleus. And that's why it does work, to some extent in treating both opiate withdrawal and also alcohol withdrawal because it decreases norepinephrine output from the locus coeruleus. It is not an antagonist, it is an agonist. And by the way, a very popular drug these days that everyone's talking about xylazine is also an alpha-2 adrenergic agonist causes sedation by decreasing norepinephrine tone.

42:25

A pregnant women with opioid use disorder has been maintained on methadone 100 milligrams for the past three months, and presents for prenatal evaluation at 12 weeks of gestation sounds like the same patient as in the previous one. The most appropriate recommendation regarding her methadone treatment during pregnancy would be the following. Begin a slow method on taper before the second trimester; Taper her dose to 40 milligrams and maintain throughout the pregnancy- taper from 100 to 40. Discontinue methadone because she wants to breastfeed her newborn, Continue her dose of 100 milligrams a day and increase as needed in the late second or third trimester of pregnancy.

43:10

We had a lot of confidence in D's.

43:13

You're saying D as in David Right?

43:15

D as in David. That's correct.

43:16

I'm really happy to hear that because I've done a lot of work with methadone over the years, and I would say no drug is as is as conflicted or as misunderstood as methadone. And I think I think you know, pregnancy is an important topic for you to know a lot about. So methadone is often called the gold standard for use in pregnancy and women who have, or people who have an opioid use disorder. But buprenorphine is a perfectly reasonable alternative. Many people would say that it really is a first

line drug these days, and I would agree with that as well. But this question is about methadone. So methadone, or buprenorphine or or opiate agonist therapy, is the recommendation of every reasonable organization in women who have an opioid use disorder during the pregnancy is to maintain them. So the slow taper is not a good idea, because as you taper the methadone during the pregnancy, eventually some withdrawal will occur. When the mother is in withdrawal. The baby is in withdrawal. A bunch of studies have been done about increased norepinephrine levels in the amniotic fluid. When that occurs.

44:28

There's no reason to taper the dose to 40 milligrams, that would just be an arbitrary number, and the person would be uncomfortable at 40 milligrams. With both methadone and buprenorphine, breastfeeding is not only all right, it is recommended by every organization like the American College of OB-GYN. And a matter as a matter of fact, the women who breastfeed their babies, babies tend to have a less severe course of neonatal abstinence syndrome. So the answer is D- you want to continue her dose, you want to make sure that she understands that if she has any feeling any withdrawal, she should say something and the dose should be increased. And in general doses of methadone do need to be increased in the second and third trimester of pregnancy. This has to do with volume of distribution- can also with placental metabolism of methadone.

45:23

Another. Another fact that you should know is that, in general, women become fast metabolizers of methadone during pregnancy, and the only way to manage a fast metabolizer is to split the dose. So there's a recommendation that in pregnancy, probably most women will do better with a split dose of methadone, and it's generally true of buprenorphine as well.

45:51

Okay. A 27 year old white gentleman with a past medical history for a severe opioid use disorder whom you have been treating with buprenorphine for the past two years presents for follow up at your clinic. During the previous office visit one month ago, he requested to decrease his dose of Bupe from 12 to eight, you agree to the decrease because the patient has been doing well. He reports he's continued to do well in a lower dose of Bupe. But you were worried because his pupils appear more constricted than would be expected and he seems more irritable than usual. You express concern that he does not appear well, but he assures you that he has just had a cold, you provide him with a prescription for one week of Bupe and scheduled to see him again.

46:34

In one week you get a urine drug test. The results of the drug tests are reported to you prior to his next appointment and demonstrate the following. So he has an adequate Creatinine level, the temperature is the right temperature. pH is okay. And this is sent out for confirmation testing. So buprenorphine is positive and everything else is negative. Which of the following statements regarding-, I'm sorry, buprenorphine is positive, but norbuprenorphine, the metabolite of buprenorphine is negative.

47:09

Which of the following statements regarding this patient's urine sample is correct? The positive buprenorphine test result indicates that the patient has been taking his buprenorphine as prescribed. The negative results for oxycodone, methadone and opioids indicate that the patient has been honest and has not been using any other opioid analgesics. The negative norbuprenorphine confirmation results indicate that the buprenorphine in the urine was not metabolized by the patient's liver. The negative opioid immunoassay screen invalidates the sample, because it should be positive if the patient is taking buprenorphine, a little bit of a complicated very wordy question. Very little bit confusing too.

48:00

We're getting a bunch of C's coming in through the chat.

48:04

With the people, the people are all very, very good, you're going to do very well on the exam. So the answer is C. You know, we want to get want to get Bupe levels when we get the screen when we get the confirmation testing. And we'd like to get quantitative levels as well not just qualitative, and if everything is going along, okay, there should be buprenorphine in the urine and there should be norbuprenorphine, the metabolite, there should generally be more norbuprenorphine than there is the parent compound, buprenorphine. So this test would indicate that the patient is spiking, spiking the urine by putting some of the film or the tablets into the urine and causing a positive buprenorphine, but a negative on the norbuprenorphine.

48:51

I'm gonna I think I'm gonna be running out of time. So I'm not going to go through the other, the other choices except to say that, and this, this question illustrates that that if you're going to test for buprenorphine, you have to have you have to have a special test for that. Now, you know when it says opioids negative, I didn't even know what that means, really. But if you're going to test for oxycodone you have to have oxycodone. That won't come out as a positive on opioids. Neither will methodone. So it's important that you know what you want to test for, and that you understand how the how the drug test how drug tests test so that you're not making a mistake and accusing somebody of doing something wrong. What doesn't make sense to me here is that this person is engaging in problematic behavior, which would make you suspicious that he might be diverting the buprenorphine, selling the buprenorphine, but yet he requested to go down on his dose. So questions a little bit confusing, at least for me.

49:52

Okay, a 39 year old man who's taking oral naltrexone 50 milligrams for alcohol dependence sustains a fracture to his left femur. For management of the pain, immediate administer- administration of which of the following medications is most appropriate: Aspirin, buprenorphine, butorphanol, or

fentanyl?

50:15
We are getting some Ds as in David in the chat

50:18
D as in David. Okay. So there's the right answer. You know, aspirin, I don't think most people would think is an appropriate analgesic or a potent enough analgesic for a fracture of the femur. Buprenorphine as a partial agonist is not going to be able to get through the naltrexone that he has been taking daily and he comes in without the ability to stop taking it. Butorphanol is another agonist-antagonist and I'm forgetting exactly if it's an antagonist of mu receptor and an agonist of either the delta or the kappa receptor, but it's another one of these agonist-antagonists that generally is not used very much anymore.

51:01
And fentanyl is a full agonist as you know.

51:06
Sorry about that. I'm going to lecture I'll call you back. Okay, sorry. It's amazing...

51:14
So fentanyl is a potent full agonist and probably will have the ability to display some of the naltrexone from the mu-receptor and provide some analgesia to this person with the left femur. Again, I think the point of this question is that this is a relatively severe injury, if it weren't a severe injury, then something like you know, NSAIDs or acetaminophen might be the correct answer in terms of naltrexone when somebody is on it. And you know, it's certainly first line drug these days for alcohol use disorder and often used for opioid use disorder as well. And when they're approaching a surgery, if you have time, you just stopped the PO naltrexone and in about 72 hours, they're generally ready to go. With the IM naltrexone, with IM naltrexone, you'd like to know beforehand, and you know, wait for the whole month, and then do the surgery at the three or four week mark after the last injection. The big problem is if somebody gets an injection of naltrexone on August 1, and they break their femur on on August 3, that's a little bit of a problem. And again, it's recommended that people get IV fentanyl, and maybe in the ICU setting because of some of the untoward effects that might occur.

52:35
Which of the following is true regarding prescribing methadone from a physician's office. Okay, this is a really easy one. It is only allowed if there's an opioid treatment contract. It is only allowed for patients using methadone for pain not for addiction. It is only allowed for patients using methadone

for addiction, not for pain. It is never allowed under any circumstance. All methadone must come from an Opioid Treatment Program.

53:00
Yeah, lots of B's right away.

53:02
Lots of which?

53:03
B's as in boy.

53:05
B as in boy. Yes. Okay. So it's hard to- hard to fool this crowd. So this is the way it's been for about 55 years now. When the first Controlled Substances Act was passed, people felt that methadone for opioid use disorder should be dispensed in an Opioid Treatment Program, where a whole bundle of services would be provided that it wasn't just giving the person methodone. Prior to that, though, we're talking about the late 60s. Prior to that, providers were allowed to, to, to prescribe methadone for opioid use disorder. And they were many people who were who overdosed and died. Methodone is a tricky drug. Sometimes we say it doesn't have a sense of humor. And because it has this very variable half life, if you if you dose it- if you increase the dose too quickly, you can get above the patient's tolerance. And there were hundreds of cases of methadone overdoses, usually occurring in the initiation of methadone use. So for treating pain, even pain in a person with opioid use disorder, as long as your notes indicate that you're treating pain, you can use methodone but you cannot use it for opioid use disorder. They have to get it from a clinic.

54:24
And of course, buprenorphine is distinguished by the fact that it can be prescribed outside of a clinic setting. Many people right now are trying to get this rule changed and trying to make methodone be a little bit more like buprenorphine with the possibility of an office-based office-based pathway.

54:45
Which of the following medications approved by the US Food and Drug Administration for the treatment of opioid use disorder: buprenorphine intravenous preparations, sometimes called buprenex, buprenorphine sublingual tablets. Buprenorphine transdermal patch, or Tramadol. Which of the following medications are approved by the FDA for treatment of opioid use disorder.

55:07
Also very confident B's as in boy in the chat so B

55:11
is the answer. The other formulations of buprenorphine are approved for pain and are not approved for opioid use disorder. This is another important thing to keep in mind. The the formulations that are approved for opioid use disorder, the tablets, the film, and now the subcutaneous formulations, they can be used off label to treat pain. However, the the formulations approved for pain, which are the buprenex, the the patch, they they can and there's this there's a buccal film for pain, they cannot be used to treat opioid use disorder, again, unless you are treating pain and that opioid use disorder and Tramadol is just not approved- period. Should we keep going, Giulia?

56:00
I was just going to ask you. We're right at time, but if you're able to keep going, we can keep going and cover the remaining questions.

56:06
Yeah, okay. I don't know. I don't know how many I have left.

56:09
Which of the following distinguishes a patient receiving opioid analgesics for chronic pain from the patient who has a moderate or severe opioid use disorder: development of tolerance, symptoms of physiologic withdrawal after drug discontinuation, drug craving, increased analgesic dose after the onset of acute- increased analgesic dose after the onset of acute pain requiring opioids.

56:41
We're getting some C's in the chat.

56:44
Lot of Cs, okay. So drug craving is is a common symptom of of any of any substance use disorder, including opioid use disorder. The point of the question is that there are neurobiological changes that occur with chronic opioid ingestion or chronic benzo ingestion. And they include the development of tolerance, which is a normal biological response and physical dependence, which manifests itself as withdrawal when the drug has stopped and increased analgesic dose when they have onset of acute pain, because their chronic dose is not sufficient to manage that pain. So that that's really the point. And a way to summarize this slide is to say that physical dependence and tolerance do not

necessarily equal addiction. And you folks might all know this, but you'd be surprised how many people out there providers think that as long as somebody's in withdrawal, they must have a substance use disorder. So it's an important point that the question is making.

57:48

55 year old man with chronic low back pain, spinal osteoarthritis and lumbar canal stenosis is taking 80 milligrams daily of oxycodone, 50 micrograms of fentanyl and four milligrams of alprazolam. Which of the following is most concerning for the possibility of the presence of an opioid use disorder. He now experiences no sedation from doses that he was previously unable to tolerate. His wife has locked his medication in an inaccessible location because he had been using significantly more medication than prescribed. When he ran out of his opioid medications while on vacation, he developed abdominal cramping, pain, nausea, diaphysis, myalgias, and inability to sleep. He no longer experiences adequate analgesia from the medication. This is a pretty obvious one.

58:43

We are getting lots of B's in the chat. And then I think a couple of D's.

58:47

Yeah. Again, that this is a little bit similar to the one we just had before. That, um, you know, in Choice A, they're saying that he's developed tolerance, and we want that to happen with people on chronic opioids, otherwise people on methadone maintenance could not function if they didn't develop tolerance to sedation. And when he ran out of his medication, he developed withdrawal because he was physically dependent. Again, that's just a normal neurobiological adaptation. And he no longer experiences adequate analgesia, again, that that is due to tolerance. So, by the way, you know, being on all these different medications was really part of the whole prescription opioid epidemic. But as long as that person was functioning well, on two opioids, and alprazolam and he was going to work, let's say and then being being productive. There's nothing wrong with being on these medications. It just that it got out of hand during the prescription opioid epidemic and there was just not enough attention paid to some of the problematic behavior that was occurring. Oh, that's it. Okay. Not too bad.

59:56

I realized I was muted. Yeah, so that's the end of our questions. But before we go, are there any follow up questions or any clarifications that anybody needs? I'm getting some comments in the chat saying great explanations. Thank you. All right. If not, then we can wrap up for the day. Thank you all, once again for attending and for following along and responding. And thank you so much to Dr. Salsitz and to Dr. Khan, for being here and conducting this session for us. Do you have any closing thoughts?

1:00:32

Thank you everyone for attending. And I wish you all good luck. And just what we used to say is study what you don't know. The test is not trying to really catch on a lot of esoteric material. But if you

what you don't know. The test is not trying to really catch on a lot of esoteric material. But if you don't do AA most of the time, or you don't do the psychedelics, study, what you don't know. If you know something really well. You don't have to study it that carefully. Good luck on the exam.

1:00:57

Getting lots of thank yous in the chat and I think that's to you, Dr. Salsitz.