NCRPI_ Monthly Addiction, Acupuncture_Integrative Medicine, and Pain Webinars 1200-1300 EST (CME offered) via TEAMS for APRIL 2025-20250401_120411-Meeting Recording

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◉ **Osik, Amy J CTR DHA WALTER REED MED CTR (USA)** started transcription

HW **Hal Wain** 0:06

Our goal is to enhance all of our clinical acumen. We want to encourage questions. We we hope that you've generated some questions prior to the presentation and that you will generate more during the presentation and we hope that that by the end of the series, by the end of today's presentation, many of your questions will be answered. But we also like.

To have hypotheses.

Developed based on the presentation and we're looking forward to hearing them and for all of us to recognize how we grow because of the series and without further ado, I'd like to turn this over to Doctor Lee, who is one of our pain special pain fellows at at.

World Territ doctor Lee.

L **Lee, Rebecca S CPT USARMY DHA WALTER REED MED CTR (USA)** 0:55

Hi, doctor Wayne.

Thank you for the introduction.

Good afternoon, everyone.

My name is Rebecca Lee.

I am currently a chronic pain fellow at Walter Reed. I'm of an anesthesia background to finish my residency last year and have been here as one of the three chronic pain fellows.

So just to get started today my topic is just commonly prescribed pain medications and their addiction potential.

And I just want to kind of delve on this topic because it seems like there are.

A lot of common pain medications we give, and sometimes there are folks who,

especially in our patient population who kind of ask about their the potential for getting dependent on these substances.
So.
Next I so I'm going to start with a case presentation.
Then we'll go to a brief introduction and and we'll go through some of the commonly prescribed pain medications and their potential for addiction.
Our case presentation today is of an inpatient.
Actually, he was a 28 year old male, transferred from an outside hospital status post, a right upper extremity amputation and right mandible fracture after boat propeller accident suffering of transhumeral amputation and many other kind fractures.
Lacerations his opioid regimen that he came to our hospital range from.
Dilada PCA throughout his hospital course, along with oral Dilaudid.
Lyrica, duloxetine, Celebrex, lidocaine patches.
You can.
Kind of. See the surgical history where he was going through the wringer and everything, and I just kind of wanted to bring up. I got a consult, we got a consult at the acute pain service where the consult was for assisting in managing slash, decreasing his pain. Medic.
Regimen as the patient was concerned about risk for.
And if substance are for dependent on these medications?
So a brief introduction on why this is important.
Is that analgesics?
First off, are medications that are used in the management treatment of pain.
They include several classes of medications, as you can see, including sediments and NSAID antidepressants, antidepileptics local anesthetics and opioids. And according to the International Association for the Study of.
Pain pain is defined as an unpleasant experience. Sensory and or emotional related to.
And potential or confirmed tissue damage.
Currently, the classification for pain management medication is divided into two categories, including opioids and non opioid analgesic agents. And we have heard that opioid epidemic, we've heard about a lot of the addiction potential for opioids, but sometimes patients have concerns about the non opioid medications and and their.
Addiction potential or?

Kind of a potential for dependence on them.
So First off, the first medication that we are going to go through that we are all familiar with.
Is the is acetaminophen. It was approved for use by the FDA in 1951.
It is an anti pyretic analgesic with a mechanism of action that is actually not very clearly understood at this time, but it appears to inhibit cycloxygenase in the brain selectively and this results in its ability to treat fever and pain, and it also inhibits prostaglandin synthesis in the.
Central nervous system.
It directly acts on the hypothalamus, producing an antipyretic effect, and even though acetaminophen has a good safety profile at therapeutic levels, it can cause severe liver toxicity of taking in large amounts. As we all know, the recommended dose of acetaminophen for adults is 650 to 1TH.
Milligrams every four to six hours not to exceed 4G a day, especially for those who don't have any liver disease and in children.
The dose is 50 milligrams every six hours, up to 60 milligrams.
And it's been shown that toxicity develops at 7.5g per day to 10 grams per day or 140 milligr.
Ams.
So acetaminophen hasn't been shown to be addictive, but it is most commonly misused as a recreational drug in conjunction with other drugs on its own, acetaminophen is widely accepted to be a safe drug, and is it's quite easily accessible over the counter.
And even as a combination for a lot of drugs, acetaminophen alone is not particularly havoc forming, but combinations such as codeine and Tylenol three can lead to dependency. It can cause feelings of euphoria, enhanced effects of other drugs such as narcotics, alcohol, general anesthetics, tranquilizers, sedative hypnotics and.
Any of other central nervous system depressants.
And chronic overuse of these pancreatitis can lead to the physical and psychological dependence that, you know folks are concerned about.
So in compared to dependence on acetaminophen, what we more commonly see is acetaminophen toxicity, primarily because the medication is so readily available and the perception that it is so safe.
Acetaminophen toxicity is the second most common cause of liver transplantation worldwide.

And the most common cause of liver transplant transplantation in the US is responsible for 50 to 60 emergency department visits, 2600 hospitalizations and 500 deaths per year in the US and 50% of these are unintentional overdoses.
And more than more than 60 million Americans consume acetaminophen on a weekly basis, and most are unaware that they are contained in combined products.
So.
Compared to substance.
Dependent on cinamen, the acidam toxicity that we can see has like 4 stages that we talk about first stage within 30 minutes to 24 hours.
They can be asymptomatic or have emesis second stage between 18 to 72 hours.
There may be emesis plus right upper quadrant pain and some hypotension in the next stage, 72 to 96 hours.
There can be liver dysfunction with significant renal.
Failure.
Coagulopathies metabolic acidosis, encephalopathy, and a lot of GI symptoms.
And fourth stage, 4 days, 3 weeks is survival or death, so kind of marked by recovery.
And so in the third stage is where deaf is most common. If it was to happen.
So that was kind of acetaminophen really is a very common kind of medication that we prescribe for patients.
A lot of patients are on it when they come to that chronic pain clinic, but in terms of talking to our patients.
About the actual physical dependence slash.
Relying on the medications research has not shown to be in itself an addictive or habit forming drug itself.
Next, another commonly prescribed medication class of Nsaid's, they're most commonly.
They're among the most commonly used medications in the US, accounting for over 60% of over the counter analgesic sales and over 100 million prescriptions each year.
In 2010, there were approximately 72 million people in the US who used an NZ grader or equal to three times a week.
And for at least three consecutive months over the counter and prescription, Nsaid's were sometimes used inappropriately together and patterns of NZ use. They have been associated with risk of adverse medical consequences such as upper GI bleeding and kidney dysfunction.
That we'll go over.

In a little bit later, the primary mechanism of action is the inhibition of the cyclic oxygenase enzyme, thereby inhibiting prostaglandin synthesis and drugs in this group are categorized according to chemical structure and selectivity.
And most NSAID inhibit both Coccidioforms Cox one and two with little selectivity.
But those that do bind with higher affinity to one or the other will exert more of the anti-inflammatory analgesic and antipyretic effects on different.
Degrees. Currently there are more than 20 different N sets that are commercially available, and the choice of the agent really depends on several factors, including core morbidities, risk of bleeding, and the response to of the different between patients.
Though documented in.
Studies of substance use the prevalence of NSAID use is super low and really few detailed descriptions of such cases and on kind of a literature.
Literature searched.
Found one case report appear in like it's only appearing in peer reviewed literature, so this is before we go on to the next slide. The kind of the most commonly used NSAIDs as you can see it has the Cox 2 selectivity and the GI risks and cardiovascular RIS.
Kind of the clinical uses for them in the chronic pain clinic, we a lot of military folks that we see are are already on Motrin.
And or naproxen. And we generally from the chronic pain clinic like to you know switch to either mobic or or Celebrex time, super important to as we kind of mentioned to ensure that the patients themselves are not doubling down on.
The NSAID.
And taking multiple.
So NZ use disorder is as I kind of mentioned, with only one such kind of case report appearing in the peer reviewed literature and said use Nsaid's generally are thought to have little or no addictive potential and they are not classified as as we know a contro.
Substance. And they've been actually used as a replacement for placebo in pain related clinical trials.
And such as they're the most common drugs you know, use across the globe to efficacy and easy availability.
And how would this success?
They come with some serious, unavoidable adverse effects and causing more than

30% of hospitalizations due to overdosage.
Some of the risk risks of severe.
Or endset toxicity or too much Nsaid's include severe GI adverse effects, including ulcerations.
Bleeding or perforations?
And those, though these risks can occur at any time in patients of any age, these events are more likely to present in the elderly.
And for folks who have been taking large amounts of insulin for a long, long amounts of time, other undesirable GI events can include nausea, Pepsi, loss of appetite, some abdominal pain, and diarrhea.
There can also be increased incidence of myocardial infarction and stroke.
Blood pressure, elevation and potentiation of congestive heart failure can also have increased risk of acute kidney injury due to decreased renal blood flow and renal toxicity can also manifest itself as renal papillary necrosis and interstitial nephritis.
Aside from these independent toxicities, Nsaid's may also result in AD.
Effects when taking concurrently with kind of other numerous drugs leading to adverse effects of various other organs.
And as this chart shows, really, and that can have quite a a profound effect if taken in.
Non recommended doses in having a systemic issue, but kind of like a acetaminophen MSE. It's in itself an NZ themselves, don't cause a dependence on using.
Or needing kind of an N set for for a patient who's been on it.
Next commonly.
Prescribed medication are kind of the Tcas.
The tricyclic antidepressants.
They constitute a class of medications that were initially introduced to the market in 1959 as a pharmacotherapy for major depressive disorder.
Tca's are now regarded as a second line treatment options for depression alongside the Ssri's and off label indications for TCA.
Are for adults, especially our migraine prophylaxis, OCD, insomnia, anxiety and the management of chronic pain that we're interested in, particularly in the neuropathic pain conditions such as myofascial pain.
Diabetic neuropathy and post post, hepatic neurology.
They exhibit diverse receptor affinities that can contribute to these adverse to

adverse effects, including Constipation, dizziness.
Your Estonia orthostatic hypotension dizziness cardiovascular complications.
Endochoronergic symptoms, seizures, thrombocytopenia and kind of the mnemonic over there. As you see the TCA side effects that can happen.
Arrhythmia such as QTC prolongation leading to vibration and sudden cardiac death, is also a consideration and particularly in patients with preexisting ischemic heart disease may be contraindicated.
Especially for the elderly.
In terms of dosing and the kind of the most commonly prescribed gets pain related, Tcas include amitriptyline as you can see can take 25 to 150 milligrams once daily or two divided doses.
And caution, it must be taken in patients over 65.
Nortriptyline is another medication that can be seen in the chronic pain world with initial disc of 10MG's daily.
Decipher mean is also can be seen. However, in the chronic pain clinic, at least from what I've seen. What I've seen the patients been on, it has mostly been amitriptyline and nortriptyline. And as you can see from this chart right here, the for neuropathic pain and fibromyalgia AM.
And Nortriptyline are the ones that are kind of the most indicated or it's for their use.
In terms of Tcas kind of potential?
For leading to substance dependence or addiction, is TCS can have been shown to show the potential to cause dependence syndrome in vulnerable individuals, especially amitriptyline, abusive and addictive properties.
These case reports have shown may result from its euphoric and sedative effects, where patients have reported or a case report right here reported that the patient was feeling these before.
Flexin and stimulant effect the antihistaminic and anti cholinergic properties of these drugs may result in the stimulant euphoric, psychedelic effects that may lead to.
These patients.
Having dependents or abusing these drugs.
And it was shown in these the case report that, like individuals with substance use disorders, are particularly THC or benzos.
Can have a higher risk in developing this dependence.
This potential for reduce and dependence on for these individuals on Tcas.
Currently, there are no prior reports of Nortriptyline being used as a substance of

abuse.
And because prior documentation has attributed the majority of PC abuse as being primarily with tertiary act, amines likely as a result of their more prominent.
Side effect profile and interaction with other substances of abuse.
And due to their kind of narrow therapeutic index, TCA are prone to induced toxicity in the event of accident or intentional overdose. They have they exhibit higher rates of death compared to other antidepressants primarily attributed to elevated rates of suicide and resulting from deliberate overdoses and some signs.
And symptoms that we can be aware of for TCA overdose include ETG abnormality. Such as the QTC polling station wide and QRS complex, hypotension, seizures, tremors, coma and other kind of anticholinergic effects.
And Tca's most frequent causes of death were generally attributed to hypotension, or arrhythmias.
So that was kind of like an overdose. Other folks can also be present with withdrawal symptoms, especially if someone has been on amitriptyline.
Not tripling for a long term. They may show flu like symptoms like chills, myalgias, headaches, nauseas and excessive sweating, insomnia, cardiac arrhythmia.
So in general, for patients who have.
I guess extra kind of core morbidities.
They are on extra medication or they are using or have symptoms of their psychiatric. Conditions or other are on other medications.
TCA is compared to compared to acetaminophen or NZ, have been there are reports of having more of a potential to cause dependence in these vulnerable individuals, with these additional kind of risk factors.
Next, we'll talk about some antidepressants, such as serotonin, the Snrs they've been used to treat a wide range of pain conditions in addition to their use of depressive disorders.
But they're for analgesia.
They're used at a lower dose and they have a different risk profile and side effect of these doses.
Snr is function by inhibiting serotonin and noradrenaline reuptake in the presynaptic cleft of the neuron, and with numerous studies can show the potential use for the treatment of musculoskeletal pain, low back pain and neuropathic pain conditions.
Serotonin and norepi are primarily involved in the modulation of pain via descending pain pathways.

In the brain and spinal cord. And so this in the mechanism of action that they in site in modulating or in influencing how these medications can help with pain. Duloxetine is commonly used to manage depression as talked about.
Painful neuropathy.
Diabetic neuropathy and chronic muscle stabil pain conditions such as OA and low back pain.
Typical doses for chronic musculoskeletal neuropathic pain is from 30 to 60MG daily, and you can see some.
Common side effects include some headaches, drowsiness, insomnia, fatigue, nodule weight, loss and other can.
More concerning side effects may include when they start the medications and suicidality hepatoxicity serotonin syndrome, hyponatremia, venlafaxine compared to duloxetine we don't see as much for chronic pain treatment.
However, it is also.
Come it is the next commonly used.
Sri and these typical doses range from 75 to 225 minutes daily.
They offer Snris are a valuable option for patients suffering from these different neuropathic and chronic pain conditions.
And.
From their doses, like their lower doses compared to their mood, kind of stabilizing abilities and these lower doses have been shown to have anti-inflammatory capabilities.
And analytic capabilities and intent.
No susceptible effects at at these lower doses.
Although Snris, they don't produce a report high like the majority of other drugs.
People can still misuse it due to its calming and mood boosting effects.
Many individuals will.
Often it's been cited to that they can often crush the drug and mix it with liquid in order to feel the effects immediately.
Bypassing the extended time release capsule and they can be diverted.
Use such as this to increase the and this can increase the risk of serious complications such as abdominal cramping, convulsions and severe skin reactions.
Like the majority of antidepressants, both duloxetine and venlafaxine are generally considered to be non addictive, but because of these kind of as we were just mentioning, the ability to.

Kind of.
It's calming and mood boosting effect.
Can lead to physical dependence.
More often than not, though, we can for patients who have been taking duloxetine for a while, especially duloxetine can start to experience. For those who just abruptly stop their dose or reduce their dose.
Can such experience withdrawal symptoms?
And as you can see, kind of like the TCA withdrawal symptoms, there can be flu like symptoms, some sweating, hypertension, anxiety, tremors and.
These kind of effects can buy if they decide to just decrease their dose or stop on their own, can lead to actually a cycle of addiction and dependence where individuals can go through the cycle of building up tolerance and effective, taking more and more medication just sometimes and.
That could be kind of precipitated by these patients not understanding that.
Like these need to be tapered off instead of just being cold Turkey.
And stopping it.
In so in terms of kind of its diction potential compared to, like I said, acetaminophen or enzymes, definitely a little bit more risk involved, especially just stca's for folks who are at a higher risk or at a vulnerable.
Population risk.
They there is a higher addiction potential compared to our first two medications that we talked.
Gabapentin and prebulin are of the class of anti epileptics. There are several epileptic drugs that are known for the analgesic properties and it's the mechanism. Action are ligands to the delta subunit of the of the calcium channels and they are overexpressing. Patients with neuropathic pain and by red.
This calcium dependent release of neurotransmitters these drugs.
Can decrease the excitability.
And in this class gabapentin.
And pregabalin are the most commonly prescribed medication.
Gabapentin can be used for most commonly for post herpetic neuralgia in adults, and neuropathic pain gabapentin in the past was mostly known as the Wonder drug or a drug that can just be prescribed Willy nilly.
It was part of the eras protocol in some aspects in some places.
And so it has been prescribed very, very commonly prescribed.

Pre Gabilan also can treat neuropathic pain associated with diabetic peripheral neuropathy or spinal cord injury. A fibromyalgia and postherpetic neuralgia less commonly seen but can be used for chronic pain in the chronic pain clinic is oxcarbazepine and carbamazepine, especially for trigeminal or glossopharyngeal neuralgia.
Just before we get into like the potential of like independence in comparing GAAP pension and pregabalin, there are limited studies kind of directly comparing the efficacy of these two medications.
They both improve neuropathic pain, but there was no clear difference between the two when it came to pain reduction.
However, for a lot of the patients in these studies.
There seemed to have been a better, quicker pain relief from from pregabalin compared to gabapentin.
Which was advantageous to many of the patients. Other studies also showed that there was a significant reduction in the visual analog scale in measurement for acute and chronic pain for both medications.
But it still took twice as long for gabapentin to achieve a significant reduction in pain quality, and when they kind of measured it out, it took gabapentin 8 weeks versus Prednisone.
Significant reduction and there's another study that I found was a cohort study that examined the reduction in pain severity for patients who were gabapentin responders when they inputted a pregabalin as a substitute and.
Or not.
And they also compared to the non responders on both gabapentin responders and non responders, they achieved an additional neuropathic pain relief about 25% following substitution per gabalin over 6 to 12 months.
And this chart kind of shows the conversion factor of gabapentin and pregabalin.
And in terms of their kind of potential for?
Substance dependent, like I said, like in the last decade, both gab and pregabalin have become really widely widely prescribed prescribed drugs with.
Prescriptions in the United States and in the world.
They are.
They were.
They can be used for anxiety and non neuropathic pain with instability.
All these things.

And it was shown in kind of this neurosci systemic review where they've reviewed multiple papers in that gabapentin appeared to have no relevant rewarding properties and those of pregabalin were low and occurred only in doses that were more than Shepherd predicted dose dependence on pregabalin was shown to.
Be somewhat stronger and more sustaining than the dependence on gabapentin.
And.
If patients were just purely consuming more gabapentinoids in itself compared to the safe, but it became lethal if mixed with other drugs of abuse, most, like opioids and sedatives in that there was that extra increased risk for.
Increased risk for respiratory depression and.
In that it was increasing that risk.
So the conclusion from this paper, the systemic review was that the addiction risk for gabapentin is lower than pregabalin in itself in patients without current or past Sud substance use disorder. The risk of developing a dependence on gabapentin is very low, however.
And Tca's impatience with comorbidities in patients with history of sud's and in patients with opioid use disorders or other kind of comorbidities.
The the risk the increase in dependence on gabapentin cube gabalin increased and it was the author's stress that for gabapentin and Prednisone that patients needed to be appropriately.
Counseled on not stopping.
Or, you know, following the instructions on how to take the gabapentin and pre gabapentin, pretty pretty strictly in terms of kind of limiting that risk of either toxicity, either that risk of withdrawal and especially for patients with chronic to decrease that risk of even dependence.
This chart is just a nice kind of summary of how the characteristics of gabapentin slash pregabalin.
Can compare to other medications that we know can can have more addiction potential. As you can see the self, the wanting self administration behavior for both gabapentin and pregabalin compared to opioids or alcohol, benzos or.
Cannabis is fairly low.
In terms of wanting the voluntary treatment, seeking behavior was also low compared to the other.
Kind of more habit forming medications.
And the euphorisation of liking the medication itself.

Is for it was high, but especially it was high for patients who are taking more than prescribed or they were overdosing kind of on the medication dosages.
And those were kind of the major kind of categories that really got that was highlighted.
But this physical tolerance dependence, which is interesting in that gabapentin and pregabalin as we kind of talked about, have that has that increased risk for physical dependence. But in terms of more increased risk for having withdrawal symptoms and then having more tolerance for these medications if if taking.
More and more.
Or if they just stop cold Turkey.
So education is a big, big part of gabapentin and pregabalin.
Those are the medications that are commonly prescribed that I focused on.
In terms of the non opioid category and as we all know, opioids now kind of the opioid epidemic and everything just want this talk we can do a whole talk on just opioids themselves and their potential for abuse, their potential for dependence and kind of their.
Potential for just having their addiction potential in itself.
So today I'm just going to, as we've already spent a lot of time on the non opioid.
It's just a little bit of time on the opioids himself.
But there are broad costs of medications with structural resemblance to natural plant alkaloid found in opium, opium. They are recognized as one of the most effective and widely used drugs in treating severe pain, especially for acute pain status.
Post to surgery, they've been shown to be very effective. However, because of maybe.
Our past history and all that, and like our pandemic right now.
Epidemic they are very controversial in, particularly because of the potential, as we already have kind of alluded to for addiction tolerance and side effects.
And they have great indications for acute and chronic pain treatment.
But there are guidelines recommending that it should only be used for expected benefits for both pain and function when they outweigh the risks and kind of opioids start at like the lowest possible level and then we can increase the kind of the ladder of.
Giving to treat the pain.
Majority of these clinical relevant opioids act primarily at the MU receptors are considered MU agonists, but they also can act on copper, Delta and Sigma and other

MU receptors. Depending on which receptor's activated, there are different effects and presynaptically just mechanism action wise they as well know.
They block calcium channel.
S on the neurons receptive afferent nerves.
And inhibit the release of neurotransmitters such as substance P and glutamate.
Post synaptically they inhouse the effect activity of potassium channels.
They hyperpolarize cell membranes and increase the required action potential to generate, you know, susceptive neurotransmission.
Opioid use disorder is defined as the chronic use of opiates that causes chronic significant distress or impairment and symptoms of this disease.
They kind of like other if you are using other substances for abuse can there's an overpowering desire to use more increased tolerance and withdrawal syndrome when the medications are discontinued and they can range from, you know, I've been using like dependents, flash addiction kind of simultaneous.
But the whole get the spectrum of it can lead from dependence to then on addiction there are over 60 million people worldwide and three million in the United States who meet opioid use disorder.
And opioid use disorder has resulted in 120,000 and 47,000 for the world and 47,000 deaths per year in the United States.
And they have killed more people than any other drug in history, and the prevalence has just continue to go up and dependency really varied by age and gender.
Her research men are more likely to use and become dependent on opioids, and they account for the majority of opioid related overdoses.
Women are prescribed opiates a little bit more for analgesia more often than men.
But men have been accounted for majority of these OPI related overdoses.
Opi related deaths are high.
Best among individuals been to ages of 40 and 50.
And they can occur in in four patients from all different educational, socioeconomic backgrounds. But kind of like other.
Risk factors and comorbidities that we talked about very similarly.
Risk factors can include folks who have been exposed to an environment that includes opioid use disorder.
Peer pressure up here.
Use of opioids, opiates or exposure.
To opiate analgesics from previous injury and patients with depression.

Stress disorder, anxiety or childhood trauma also had increased risk for opiate disorder.
And this kind of shows the different like opioid effects led and the six most addictive opiates that we have seen at this time are heroin, fentanyl, morphine, Vicodin, oxy and methadone. And most commonly in the chronic pain clinic we see folks.
On especially.
Prescribed with oxys.
And sometimes fentanyl patches and even morphine, either in an oral form, interfacial form in the intrathecal paint pumps, or and some folks who are on methadone.
And these you can see are very addictive.
This is another graph that shows kind of the strongest to weakest opioid addiction potential and or the potency versus the weakness of it and.
These are common.
Medications and there are plenty of research showing like it's addiction, potential use for increased risk for substance abuse, substance dependence and in the military we are not.
We're also prone to having patients have this substance, use potential as a lot of our folks are suffering with like other core morbidities and.
And the risk increased risk factors.
So back to the case.
That recommendation?
So just to recap, it was a Mayo, a gentleman who here was coming from a quite a an injury of a right upper extremity amputation and fracture and acute pain service was consulted to to kind of manage the pain regimen because the A patient had concerns for.
Addiction for increases for addiction potential and he wanted to know how he could.
Kind of get off of these medications that he had.
So he was just to recap was on the Dilaudid, Celebrex, Tylenol pregabalin duloxetine.
And he still had the uncontrolled phantom limb pain that was really not well controlled with this oral pain medication.
So in regards to kind of telling the patient or kind of informing, having like an informed discussion with the patient, we kind of went through the different medication pain medication classes he was on, including the potential for the risk for like NSAID use or continued NSAID use or.

Like Tylenol, pregabalin duloxetine and like the addiction potential for, like opioids in itself, he was most concerned about.
And so we kind of.
I we have talked about in this case itself compared to the non opioid class.
The opioid class has that increased risk for dependence for addiction.
So in terms of kind of providing recommendations, the patient was continued on his non opioid pain regimen. However, we started to decrease him on the opioids, his Dilaudid.
IV pushes and his allotted PO by offering him a Sprint.
A peripheral nerve stimulator in where we were trying to get at his phantom limb pain that he was mostly trying to use the opioids to control and which was not giving up much benefit. And he is after this console after replaced the Sprint can peripheral nerve stimulator at.
The infra.
Redular places.
To hit the brake or to manage the brachial plexus.
As you can see, the red distribution where he was having the phantom limb pain.
His opioid use decreased significantly and in a span of 24 hours from needing Dilaudid, Ivy pushes.
Especially during at night from four times.
Throughout kind of the day he slowly he decreases opioid use to just needing Po dilotted like 4 milligrams.
Times oral twice a day after the uh peripheral nerve stim.
Uli, the other non opioid umm regimen.
So in conclusion, pain management really.
It requires a multidisciplinary health care team to address these pain to adequately address pain control, and to adequately address.
The concerns of patients for their kind of dependence on these medications.
A lot of times for these, not especially these non opioid medications, but even the opioid medications a lot of times the biggest one of our biggest things that we can help the patients realize is through proper education, proper medication use and in terms of so that we can.
Limit toxicity or withdrawal symptoms.
Multimodal analgesia. It combines like all these medications that we talked about.
And no matter the addiction potential of a drug that patients should always be

monitored for, these signs of overdose, toxicity and withdrawal.
So these are my references.
Now that and that is the end of my conclusion presentation and I will now open it up to questions.
Thank you everyone for your time.

Hal Wain 41:10
Before we do, before we do that, Doctor Lee, I wanna say and thank you for an outstanding presentation.
It it rivals the presentation you gave us last month on pain because you prepared us for the board's on pain as well. You as well as you preparing us for if there was boards on analgesia, you talked about the mechanism of operation, the side effects.
Potential dependency needs or dependency outcomes.
You talked about the need to look at comorbidity.
What's going on with the patient and how certain drugs would impact it?
Some of the analgesics we give you talked about the impact of these comorbidities, et cetera. In general, you talked about the medical risks that are incurring with some of the use of the analgesia, particularly you stress the frequency and many of us may not have recalled that.
Frequency of of liver transplants based on liver toxicity.
Based on the abuse of or the abuse in many ways of Tylenol, but you've done an outstanding job.
You've given us references that we can all look at.
You give us the mechanisms of how these drugs work, so I want to compliment you on this.
I want to thank you on it and you've given us something that we can look as references for all of us.
With that, I'd like to open it up for questions or comments.
From our audience and you did generate a lot of hypothesis.
Tries to think about.
So thank you again.

Lee, Rebecca S CPT USARMY DHA WALTER REED MED CTR (USA) 42:42
Thank you.
Thank you, Doctor Wayne.

Osik, Amy J CTR DHA WALTER REED MED CTR (USA) 42:55
It looks like we have somebody in the chat, so that's good. We'll stand by.

Lee, Rebecca S CPT USARMY DHA WALTER REED MED CTR (USA) 43:01
Sounds good.

Hal Wain 43:05
Amy, could you read it when it comes through, please?

Osik, Amy J CTR DHA WALTER REED MED CTR (USA) 43:09
Sure will do.
Oh, well there. They stopped.
From what I can see chatting.

Hal Wain 43:25
I mean, I'll turn it back to you then and thank you for all your help as well and same to you, Carla.

Osik, Amy J CTR DHA WALTER REED MED CTR (USA) 43:32
It looks like there is.
Thank you for the comprehensive overview question. You brought up the issue.
Re toxicity on heart and brain, ansaids, how significant?

Lee, Rebecca S CPT USARMY DHA WALTER REED MED CTR (USA) 43:39
Mm hmm.
So, you know, I don't have the exact kind of reference here in front of me. However, in terms of the increased risk for NZ use and in terms of, yeah, as you said they they are very most use of the over the counter medications and kind of the.
Research or the case reports that I was reading on the Nsaid's like for, especially for patients greater than 65 or?
Patients who already have.
Have, especially for the myocardial or for cardiovascular risk factors. If they already have.
Kind of core morbidities for increased kind of cardiac risk factors. There is that

potential for increased risk for MI blood pressure and elevation and exacerbation of congestive heart failure. And I don't have the exact kind of percentages I can get back to you on it but.
Think the the review article that I was reading.
On Pub Med was really just focused on can the elderly folks who have that those comorbidities already for increased cardiovascular disease. They really recommended kind of reevaluating kind of the NSAID use especially if they have used it for a long time.
So kind of the dosage in itself, the amount that they were taking and.
In addition to kind of the duration of NSAID use.
Increase the kind of chance for these adverse effects for for cardiovascular issues, for renal issues and for GI issues.
But I can get back to you with like an exact how how much risk on that?
They that that elderly especially kind of got from from the NSA's so.

Osik, Amy J CTR DHA WALTER REED MED CTR (USA) 45:42
Great presentation, he says.
Thank you.
Thank you for your question. The other person said thank you.
Great. I don't want to delay any further.
This was an amazing presentation.
Thank you, Doctor Lily.
We really appreciate.
I just want to cover some housekeeping items this afternoon. At 1530, we will be having the functional medicine webinar. Usually it is a 1500 this time reminder it is 1530 so 330.
And then join us the rest of this week for tomorrow with Doctor Lonnie Jarrett, who will be doing an acupuncture webinar and Thursday at 12 Eastern for the Payne webinar with Doctor Miller covering understanding CPR.
Crps and treatment options.
Additionally, I am going to go ahead and leave the room open.
We are going to drop the save the date for the pain care skills, training for and Sud training for 2025.
And we will also drop the CME sign in sheet for the session. If you are DoD and you can return it to myself, Amy Osek or Carla Bujan. And that is it for today.

But thank you so much for joining us and your flexibility and joining us on teams.
Have a wonderful rest of your day and hope to see you the rest of the week.

Lee, Rebecca S CPT USARMY DHA WALTER REED MED CTR (USA) 47:02
Thank you everyone.

Osik, Amy J CTR DHA WALTER REED MED CTR (USA) 47:04
Thank you.
Carla, I'm going to leave the room open for until about 12:56.

Labuguen, Carla B CTR DHA (USA) stopped transcription