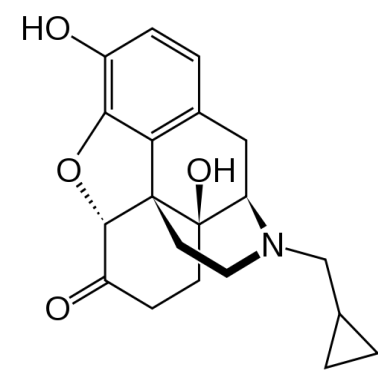




BROWN



Management of chronic pain with Low Dose Naltrexone (LDN)

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- This presentation or discussion is NOT meant to take the place of your doctor.



Introduction

- Training and Fellowship, Harvard Medical school
- Pain Medicine specialist
- Assistant Professor – Brown Medical School, Rhode Island



Chronic pain

- Chronic pain conditions are of 3 types:
 1. Structural pain (Nociceptive pain)
 2. Nerve pain (Neuropathic pain)
 3. Mixed - Nociceptive and neuropathic pain

LDN and chronic pain

- This presentation will discuss one example of each
- Each of the following cases is representative of many cases treated with Low Dose Naltrexone (LDN).

Spinal pain and LDN

An example of predominantly structural (Nociceptive) pain

Low back pain – back pain

- 56 year old lady presented with significant lower back pain 5 years ago
- Location: across her lower back, radiating down both her legs
- Constant pain with intermittent exacerbation
- She had 3 lower back surgeries – lumbar discectomy, lumbar fusion, another lumbar fusion
- None of the surgeries helped.
- Tried tons of physical therapy

Low back pain – back pain

- Medications:
 - oxycodone sustained release 40mg twice a day
 - Oxycodone with acetaminophen (paracetamol) 5/325mg 6 times a day
 - Gabapentin 600mg three times a day
 - Ibuprofen 200mg as needed.
 - Lisinopril 5mg for high blood pressure
 - Sertaline 40mg for depression
 - Zolpidem for sleep

Low back pain

- Tried and failed:
 - Antidepressants
 - Non steroidal ant inflammatory drugs
 - Anticonvulsants
 - TENS unit
 - Spinal cord stimulator
 - Muscle relaxants

Low back pain – back pain

- Physical examination:
 - Antalgic gait
 - Tenderness to the lumbar region
 - Lumbar facet joint stress test – positive on both sides
 - Sacroiliac joint stress test – positive on both sides
 - Straight leg raising test positive on the right
 - Unable to walk greater than 30 feet (9 meters)
 - Deep tendon reflexes to right knee – absent

Low back pain – back pain

- Treatment strategy
- Lumbar steroid injections to transitional level facet joints (facet joints at the junction of the fused and unfused levels) – mild to moderate relief
- Sacroiliac joint injections – moderate relief
- Lumbar epidural steroid injections – no relief
- Overall the injections provided moderate relief. Patient continued to have disabling pain

Low back pain

- Started the process of tapering her off all opioids, starting with the sustained release ones
- During this process we continued with injections since they had provided moderate relief
- Tapered off all opioids by 3 months
- She reported improvement in cognitive functioning
- Continued with same pain

Low back pain

- Started LDN (Low Dose Naltrexone) at 2.5 mg every morning for 2 weeks
- Then, LDN 4.5mg every morning for 2 weeks
- Then, LDN 4.5 mg at night
- After 4 weeks – able to walk 100 feet, not as fatigued, greatly improved cognitive functioning
- After 8 weeks – able to buy groceries for her family (1 hour), able to cook. No more injections

Low back pain

- At 6 months – looking for a job, able to function, volunteers at her church Sunday school
- Still continues to have some base line pain but very rare flare ups.
- Has more good days than bad days.

Low back pain

- Side effects:
- Initially had intermittent headaches which responded well to acetaminophen. Resolved after 2 weeks of taking LDN

Complex Regional Pain Syndrome (CRPS / RSD)

An example of predominantly
Neuropathic (nerve) pain

Complex Regional Pain Syndrome (CRPS)

- It's a type of nerve pain (neuropathic pain).
- Usually starts after a trauma
- It is the most painful condition known to mankind.
- Very common – 20,000 new cases every year in the US
- No good drugs that work on it
- Affects adults and children

CRPS - case

- 15 years old girl, sprained left foot.
- Severe pain to left foot
- X-rays, MRI, EMG and other tests – normal
- Foot placed in cast – pain worsened.
- Classical symptoms of CRPS
- Seen at a Children’s Hospital in Boston
- Underwent extensive physical therapy, spinal injections and medications with no change, pain started to mirror in right leg

CRPS - case

- Referred to psychiatry for a diagnosis of Conversion disorder.
- Mother accused by hospital of child neglect after she sought treatment with other doctors
- Child Protection services involved.
- All treatment withdrawn
- Child's condition continued to worsen. Now in wheel chair because of CRPS to both legs

CRPS - case

- I saw her when she was 18 years old.
- Excruciating pain to both legs.
- Attempted suicide once
- Also developed complications of CRPS
 - Dizziness, palpitations (Postural Orthostatic Tachycardia Syndrome)
 - Atrophy of lower extremity muscles
 - Dystonia to left ankle.

CRPS - case

- Treatment started with low dose IV ketamine and LDN
- Significant response to IV low dose ketamine.
- Over the next 3 months, ketamine infusion was stopped
- Continued on LDN with significant improvement in pain and function.
- 6 months later started a low level physiotherapy, progressed slowly as tolerated to a higher level

CRPS - case

- After a year she donated her wheel chair to charity
- She continues to have some pain but is tolerable.
- The only medication she is on is LDN and propranolol

CRPS - case

- She is graduating college this year. She will be walking up the stage to receive her diploma
- There are dozens of cases that have shown a similar response to CRPS

Color asymmetry



Color, temperature and swelling



Swelling

Case of CRPS treated with LDN

CRPS with dystonia
before LDN



CRPS after LDN



Ehlers Danlos Syndrome (EDS)

An example of mixed Nociceptive
(structural) and Neuropathic (nerve)
pain

Ehlers Danlos Syndrome (EDS)

- *A 22 year old female presents with pain to multiples areas of her body – head, neck, shoulders, elbows, wrists, right knee and right gluteal region for the many years but has increased over the last 1 year.*
- *It has been worsening over the last 6 months.*
- *The pain increases with weight bearing, walking. She gets some relief with sitting in a recliner.*
- *She states that the pain is localized predominantly to her right knee.*
- *She notes a ‘popping’ sensation. Her right leg gives out occasionally when walking.*

Ehlers Danlos Syndrome (EDS)

- *On further questioning, she reports similar popping sensations to her shoulders.*
- *She often dislocates her right shoulder, hip.*
- *She reports some pain to her upper back. When asked, she indicates that she has aches and pains to her upper back, thighs, and right wrist.*
- *On eliciting further history, she reports feeling dizzy transiently when moving, palpitations, easy bruising,*
- *Takes hydrocodone intermittently (mild relief), ibuprofen regularly (moderate relief)*
- *She states that she is 'double jointed' and can do 'party tricks' such as place her feet behind her head.*

Ehlers Danlos Syndrome (EDS)

- *Her past medical history is significant for severe growing pains.*
- *On physical examination of the right knee reveals a hypermobile patella, hyperextension of both knees.*
- *Her skin is smooth and velvety.*
- *Beighton score was 6 out of 9.*
- *She has bilateral hypermobile ankles, flat feet (pes planus).*
- *She has 2 small scars from a soccer injury over her elbow and left knee. The scars are paper thin and atrophic.*
- *MRI of her right knee, right hip and lumbar spine is normal.*

Ehlers Danlos Syndrome (EDS)

- She has tried and failed every medicine known to mankind, and some snake oil remedies
- In summary, a young lady with diffuse body pain mostly to muscles and joints with a connective tissue disorder that is both nociceptive and neuropathic

2. Beighton score - Passive apposition of the thumb to the flexor aspect of the forearm

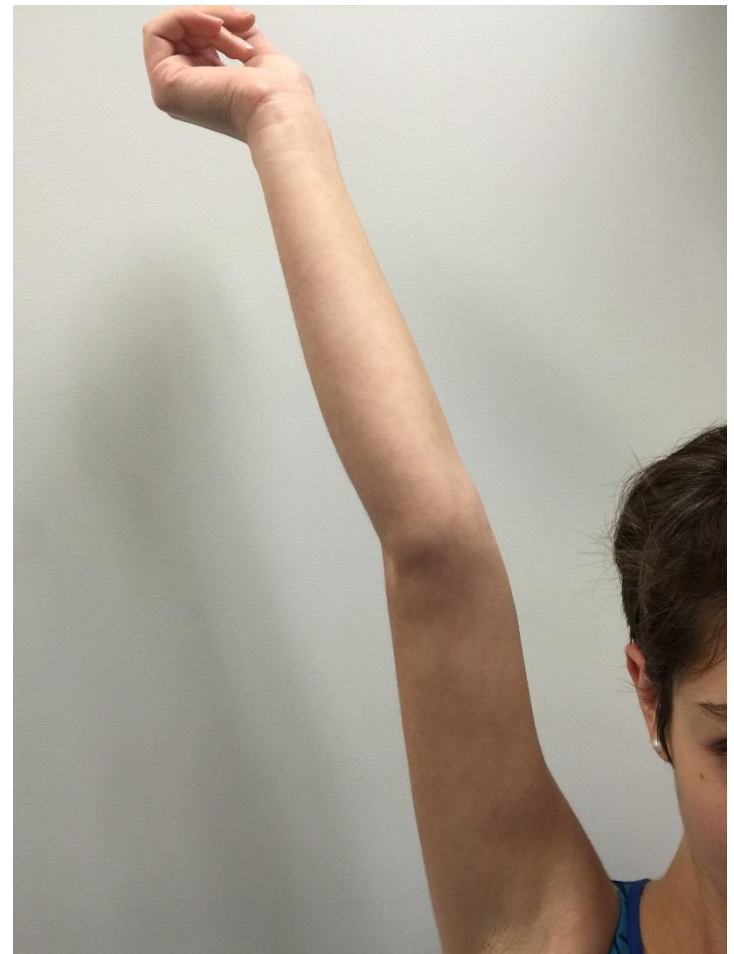


Preventing pain

- Do not sit with legs outstretched, or with legs tucked under the buttocks 'W' position



6. Beighton Score: Hyperextension of the elbow



8. Beighton Score: Hyperextension of the knees



Ehlers Danlos Syndrome (EDS)

- Proprioception exercises
- Muscle strengthening (aerobic) exercises
- Low Dose Naltrexone (LDN)
- Bracing for knee joint

Ehlers Danlos Syndrome (EDS)

- 2 weeks later – able to walk 1 block (from 50 feet/15 meters), pain same in upper and lower back
- 4 weeks – able to use walk up 1 flight of stairs without stopping, treadmill for 30 minutes at low resistance
- 12 weeks – significant decrease in pain, no longer taking any medications for pain

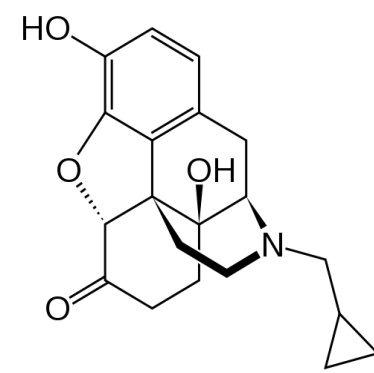
Ehlers Danlos Syndrome (EDS)

- 14 months later, she slipped on ice and fell
- Fractured left fibula
- Open reduction and internal fixation
- Her LDN was stopped for 3 months
- Noticed increasing diffuse body pain - upper back, lower back, shoulders, knees.
- LDN was restarted and by 2 months she was functioning again

Ehlers Danlos Syndrome (EDS)

- On LDN for the last 18 months.
- Pain much better controlled. Needs naproxyn occasionally
- In nursing school

Naltrexone



- Naltrexone is a reversible competitive antagonist at μ and κ receptors
- δ receptor antagonist to a lesser extent
- Its active metabolite 6- β -naltrexol is also reversible competitive antagonist at the μ and κ receptors



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Thank you

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