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CREATIVELY PERSONALIZING A CHRONIC PAIN MANAGEMENT PLAN

Anne Marie Pinard, MD

HOUSEKEEPING

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Questions

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- Researcher, Center for Interdisciplinary Research in Rehabilitation and Social Integration (CIRRIS)
- Master degree in Educational Technology

DISCLOSURES

I have the following financial relationships to disclose:

- Speaker for: Paladin Labs (2017-18), Purdue Pharma (2017), and Allergan Canada (2018)
- External Advisor for: Paladin Labs (2017) and Purdue Pharma (2018)
- Grant/Research support from: Purdue Pharma (2017) and MEDISCA Inc. (2018)
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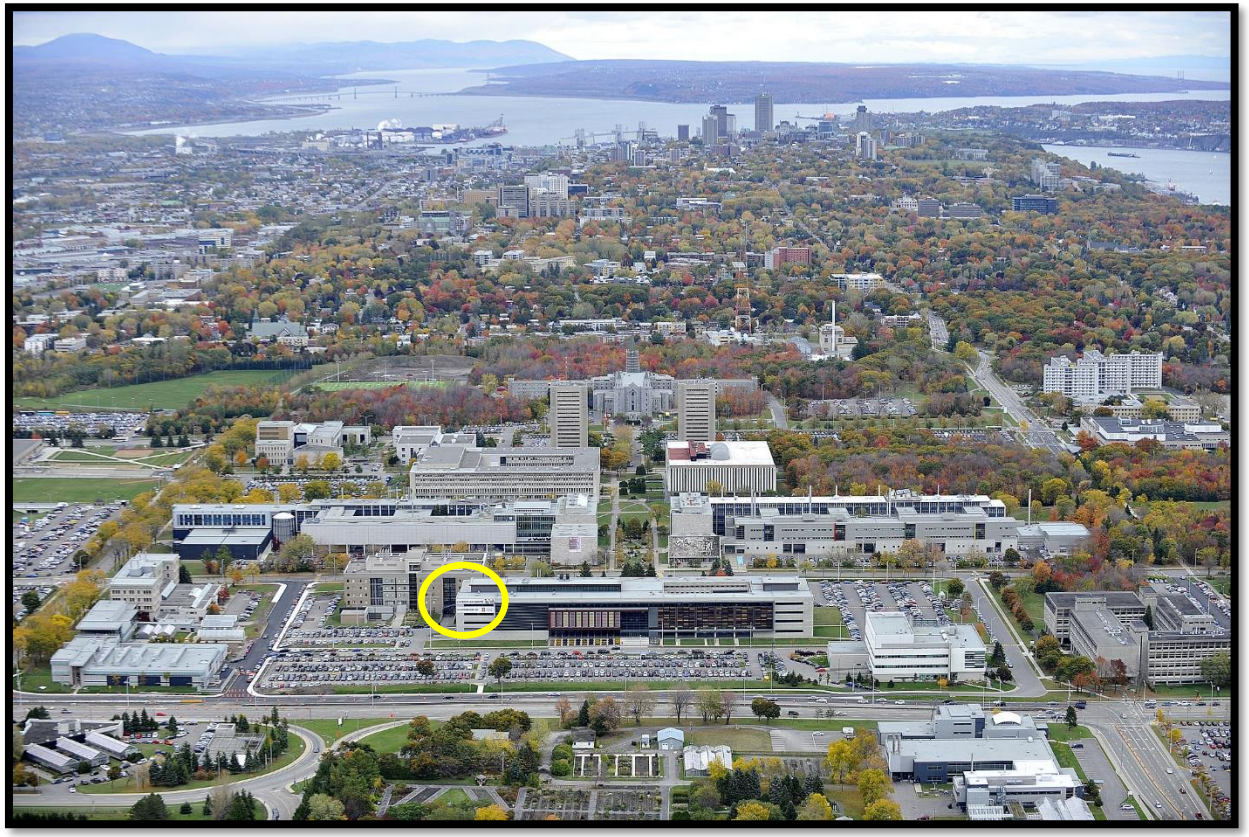

Marc Robitaille, Université Laval

WHO AM I?

As a Clinician

- Anesthesiologist by training
- Clinician in the Chronic Pain Clinic at CHU de Québec-Université Laval in Québec City

As an Associate Professor

- Program Director for Fellowship in Chronic Pain
- Chairperson of the Educational Leadership Chair in Chronic Pain Management

LEARNING OBJECTIVES

PHARMACISTS

1. Identify the basic principles of percutaneous compounded prescriptions in a specific chronic pain condition

2. Relate the different drugs used successfully in clinical practice

3. Apply the precautionary principle for prescription

4. Recognize critical information to provide the patient

LEARNING OBJECTIVES

PHARMACY TECHNICIANS

1. Evaluate the objectives and benefits of percutaneous compounded preparations for the treatment of chronic pain.

2. Identify different drugs classes commonly used in pain management.

3. Recognize critical information to be communicated to the patient.

THE BURDEN OF CHRONIC PAIN

CLINICAL CASE #1: STABBING PAIN IN THE BACK

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PATIENT INFORMATION

- 45 year old woman
- Works as a secretary
- A lot of responsibilities
- A lot of stress
- No chronic illness

CLINICAL CASE #1: STABBING PAIN IN THE BACK

IN THE LAST 2 YEARS:

- Pain in her upper back and neck
- Feels like a “burning dagger”
- Compromised sleep
- Often associated with headache
- Numbness sensation in right arm
- Had to take sick leave 3 times in the last 2 years

CLINICAL CASE #1: STABBING PAIN IN THE BACK

PHYSICAL EXAM

- Stiffness in cervical movements
- Trigger points on right side:
  - Levator scapulae
  - Superior trapezius
  - Rhomboid
- Neuro exam: Normal
- X-ray and MRI: Normal

CLINICAL CASE #1: STABBING PAIN IN THE BACK

PAST INTERVENTIONS

- NSAIDs
- Muscle relaxants
- Pregabalin
- Facet joint infiltration: Helped for 3 days…
- Just started physiotherapy ($$$)

CLINICAL CASE #1: STABBING PAIN IN THE BACK

TREATMENT OPTIONS

- Other muscle relaxants?
- NSAIDs?
- Opioids?

CLINICAL CASE #1: STABBING PAIN IN THE BACK

What about personalized treatment?

COMPOUNDED PERCUTANEOUS MEDICATION

BASIC PRINCIPLES

CLINICAL CASE #1: STABBING PAIN IN THE BACK

BACK TO OUR PATIENT

- Best Rx classes for her condition?
  - Other muscle relaxants
  - NSAIDs
  - Opioids

CLINICAL CASE #1: STABBING PAIN IN THE BACK

- Do we have to treat or prevent secondary sensitization?

YES!

- After 2 years of pain, there are certainly changes due to spinal and cerebral plasticity

HOW TO PRESCRIBE…

OR WHAT I TEACH MY COLLEAGUES AND STUDENTS!

HOW TO PRESCRIBE…

OR WHAT I TEACH MY COLLEAGUES AND STUDENTS!

- Example: Ketoprofen
- Usual po dose: Ketoprofen 75 mg TID = 225 mg daily max

- Topical preparation: Ketoprofen 3% = 3 g in 100 g
  (30 mg per 1 g of preparation)

- If using 2 g TID: 60 mg x 3 = 180 mg

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HOW TO PRESCRIBE…

OR WHAT I TEACH MY COLLEAGUES AND STUDENTS!

In this case, lower than the safety margin, but…

- Sometimes dosage strengths are higher for percutaneous dosage forms than oral dosage forms.
- Absorption is never 100% for skin, around 20% max if the skin is intact

YOU MUST BE VERY CAREFUL!

HOW TO PRESCRIBE…

OR WHAT I TEACH MY COLLEAGUES AND STUDENTS!

- Base
- Dose
- Total amount and fractions
- Metered pump
- # of gram per use, min and max # of use daily

CLINICAL CASE #1: STABBING PAIN IN THE BACK

NSAID

- Ketoprofen is a good choice
- It is very lipophilic
- In general, Ketoprofen 2-5%

CLINICAL CASE #1: STABBING PAIN IN THE BACK

MUSCLE RELAXANT

- Baclofen is very interesting, very effective!
- Central and peripheral action
- Unfortunately expensive…
- In general, Baclofen 2-3%

CLINICAL CASE #1: STABBING PAIN IN THE BACK

LOCAL ANESTHETIC

- Lidocaine is a good compromise
- Bupivacaine lasts a lot longer, but very expensive…
- Use a dosing pump
- In general, Lidocaine 5-10%

CLINICAL CASE #1: STABBING PAIN IN THE BACK

TRY TO CURB CENTRAL SENSITIZATION

- NMDA is the target!
- Ketamine is a good choice
- Be careful with dosage strength
- Abundant literature
- In general 4-8%

CLINICAL CASE #1: STABBING PAIN IN THE BACK

- Transdermal preparation in PLO base
- Metered pump 0.5g/pump, 1000 g total, 100 g/service
  - Ketoprofen 3%
  - Ketamine 7%
  - Lidocaine 7%
  - Baclofen 2%
- 0.5 g TID on trigger points and 0.5 g TID cervical spine
- Massage for at least 1 min on TP
- Purpose: To reduce muscle spasms and cervical spine pain

ADVICE FOR PATIENTS

CLINICAL CASE #2: CRPS

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COMPLEX REGIONAL PAIN SYNDROME (CRPS)

- Rare but serious disease
- Typically occurs in response to trauma or surgery
- Severe neuropathic and nociceptive pain, stiffness, skin changes, vasomotor abnormalities..
- Treatment: MOVEMENT!

CLINICAL CASE #2: CRPS

PATIENT INFORMATION

- 35 year old patient
- Diabetic Type 2, poorly controlled
- HTA
- Very intolerant to pain killers
- Distal radius fracture
- Closed reduction with pins
- Removed cast 4 month ago, bad evolution…

CLINICAL CASE #2: CRPS

PHYSICAL EXAM

- Severe left hand edema
- Severe diffuse allodynia
- Red hand, but rather cold
- Very sensitive to cold
- Significant stiffness (hand/wrist)
- Fear to move (Kinesiophobia)

CLINICAL CASE #2: CRPS

HOW DO WE HELP THIS PATIENT WITH A TOPICAL TREATMENT?

Targets when addressing chronic pain

- Nociceptive pain
- Neuropathic pain
- Peripheral and central sensitization
- Modulation of descending pain pathways (usually per os)

CLINICAL CASE #2: CRPS

USEFUL AGENTS IN THE MANAGEMENT OF **NOCICEPTIVE PAIN**

- Local anesthetics
- NSAIDs
- Sympatholytic agents (also for neuropathic pain)
- Opioids
- …

CLINICAL CASE #2: CRPS

USEFUL AGENTS IN THE MANAGEMENT OF **NEUROPATHIC PAIN**

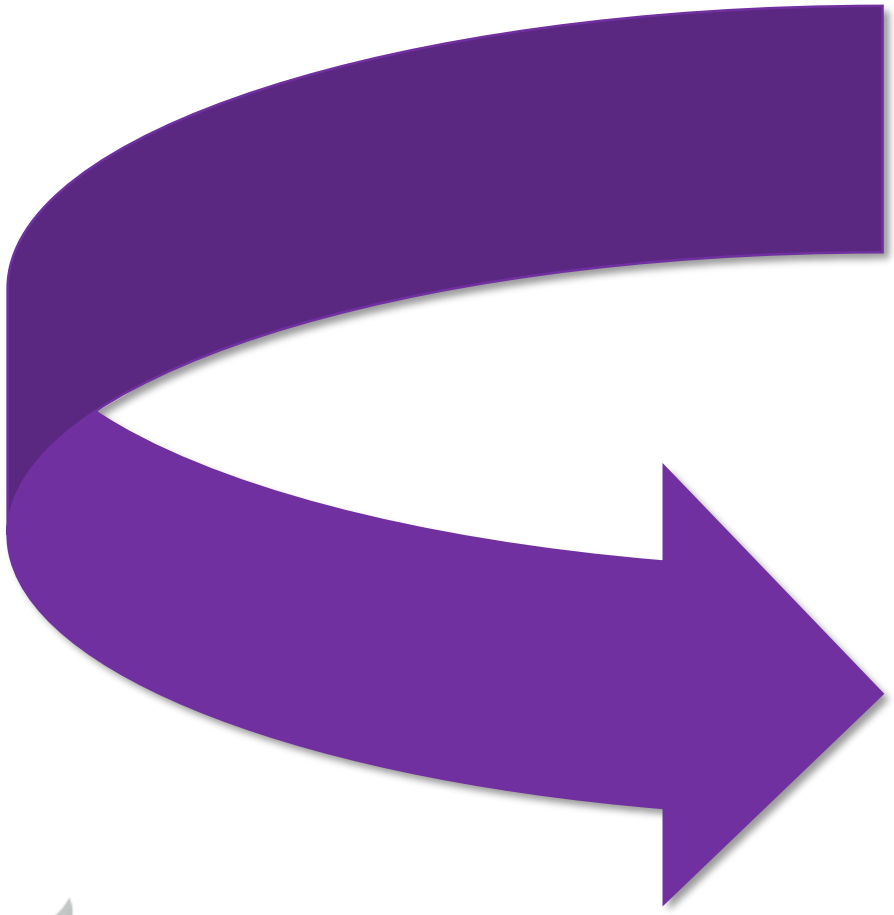
- Anticonvulsants (Na+ channel blocker)
- Ca++ channel blocker
- Local anesthetic (Na+ channel blocker)
- Opioids
- Tricyclic antidepressant
- Sympatholytic agents
- …

CLINICAL CASE #2: CRPS

USEFUL AGENTS IN THE MANAGEMENT OF **PERIPHERAL AND CENTRAL SENSITIZATION**

- NMDA receptor antagonist +++
- Anticonvulsants (Na+ channels blocker)
- Opioids
- Tricyclics

CLINICAL CASE #2: CRPS



CRPS

- ✓ Nociceptive pain
- ✓ Neuropathic pain
- ✓ Peripheral awareness
- ✓ Central sensitization

CLINICAL CASE #2: CRPS

- Nociceptive pain → Local anesthetic
- Neuropathic pain → Anticonvulsant / antidepressant + local anesthetic
- Peripheral sensitization → Local anesthetic
- Central sensitization → NMDA receptor antagonist

CLINICAL CASE #2: CRPS

POTENTIAL "RECIPE"

- Lidocaine 7%
- Ketamine 7%
- Gabapentin 4%

- Bupivacaine 3%
- Ketamine 7%
- Amitriptyline 4%

…In the appropriate base with a metered pump

OTHER CONSIDERATIONS

INTERESTING INGREDIENT: **PENTOXIFYLLINE**

- Phosphodiesterase inhibitor
- Relaxes smooth muscle (decreases vasospasms)
- A few articles in literature for CRPS
- In my experience, significantly helps in the management of CRPS and scleroderma

OTHER CONSIDERATIONS

- Clonidine
- Morphine
- Other local anesthetics
- Capsaicin
- ….

THERE ARE MANY OTHER POSSIBILITIES

OTHER CONSIDERATIONS

- Be careful
- Listen to the patient
- Read the literature
- Know the physiology
- Apply pharmacology
- Teach your patients and colleagues

BE CREATIVE!

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- Denis Boissinot, pharmacist in Quebec City
- My team at the pain clinic
- My patients

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THANK YOU FOR LISTENING
QUESTIONS?