

PROGRAM

ACUTE PAIN / REGIONAL ANESTHESIA

Duration: 2 months

Schedule: Monday to Friday 7:00 am – 5:00 pm

Place: The fellow will be at floor, recovery room and in regional anesthesia procedures

The fellow will acquire de following knowledge:

- Combination of different drugs in order to apply a multimodal therapy
- Indications of invasive treatment for cases of postoperative pain
- Uses of patient controlled analgesia (PCA) bombs
- Identify and treat opioids acute side effects
- Ultrasound guidance in peripheral nerve and interfascial blockade, and acute pain service management skills, postoperative pain.

The fellow will acquire the following skills:

- Prescribe drugs for PCA bombs
- Program PCA bombs
- Ultrasound guided blocks

Recommended reviews:

- Preventive analgesia
- Pharmacology of local anesthetics, NMDA receptor antagonist, opioids, steroids, botulinum toxin
- Urogenital pain
- Management of PCA bombs
- Principle basis of analgesia using diagnostic images
- Treatment for pharmacological complications
- Ultrasound guided minimal invasive treatments for acute pain

CHRONIC PAIN

Duration: 8 months

Schedule: Monday to Friday 7:00 am – 5:00 pm

Place: In order to acquire the following knowledge, the fellow will rotate in external rehabilitation consultation, emergengy department, interventional pain medicine procedures (CT, fluoroscopy, ultrasound procedures) and hospitalization floor.

The fellow will acquire de following knowledge:

- Knowledge of the differences between malignant neuropathic pain (central and peripheral) and how to treat it.

- Understand the basis of cancer diagnosis, treatment according to surgical and clinical oncologist and radiotherapist view.
- Apply multimodal pain management.
- Understand the importance of the multidisciplinary approach in a biopsychosocial model.
- Comprehend interventional pain management approaches in inpatient and outpatient setting.
- They will present a class per week and participate in Clinical Cases on Wednesday

The fellow will acquire the following skills:

- Indications of invasive procedures for the management of chronic pain.
- Indicate and evaluate diagnostic images.
- Interventional pain management in inpatient and outpatient setting
- Integrate the indications and evaluation of diagnostic images to their clinical practice.
- Integrate a multidisciplinary team of patient treatment, respecting the diverse proposals of each professional of the team.

Recommended reviews:

- Chronic articular pain: Arthrosis
- Fibromyalgia
- Neuropathic pain
- Pain in old people
- Deconditioning in chronic pain
- Cancer pain
- Degenerative organic disease
- Approach to the patient with spine lesion
- Regenerative Medicine

Program Non Cancer Pain:

Module 1 PAIN PHYSIOPATHOLOGY

Process of nociception: from the periphery to the SNC

- ❖ Integration of anatomo-physiopathology of pain
- ❖ Biochemistry in the transmission of pain
- ❖ Pathways of pain
- ❖ Nociceptors
- ❖ Peripheral sensitization
- ❖ Inflammatory cascade
- ❖ Dorsal Root Ganglion: involved in the processing of the pain
- ❖ Theory of the Gateway
- ❖ Central mechanism of pain transmission
- ❖ Central sensitization
- ❖ Central and segmental modulation
- ❖ Opioid receptor: biochemical structure and classification
- ❖ Opioid receptor: desensitization, internalization and tolerance
- ❖ Sodium channels dependent on voltage and its involvement in the transmission of pain
- ❖ ASIC receivers, TRPV
- ❖ Voltage-dependent Calcium Channels
- ❖ AMPA Receptors - Kainato
- ❖ Glutamate and metabotropic receptors

Module 2 SCALES OF ASSESSMENT AND PHARMACOLOGICAL PAIN TREATMENT

❖ Adverse reactions associated with opioids ❖ Uncommon side effects associated with opioids ❖ Toxicity of opioids ❖ Treatment of the side effects of opioids ❖ Neurotoxicity associated with opioids ❖ Pharmacokinetics and pharmacodynamics of the following medicines ❖ Tramadol ❖ Codeine ❖ Dextropropoxyphene ❖ Morphine ❖ Oxycodone ❖ Fentanyl ❖ Buprenorphine ❖ Methadone ❖ Hydromorphone ❖ Tapentadol ❖ Non-steroidal anti-inflammatories: action mechanism and adverse events ❖ Selective COX-2 inhibitors ❖ Adjuvants: ❖ Paracetamol ❖ Local anesthetics: lidocaine, bupivacaine, ropivacaine ❖ Antidepressants: Tricyclics and Inhibitors of the recapture of serotonin ❖ Phenothiazines: Haloperidol, levomepromazine, chlorpromazine ❖ Anticonvulsants ❖ Gabapentinoids: gabapentin, pregabalin ❖ Muscle relaxants and botulinum toxin ❖ Cannabinoids ❖ Anxiolytics: Benzodiazepines ❖ Capsaicin ❖ Bisphosphonates ❖ Steroids mechanism action and classification ❖ Contrast media ❖ Pharmacological interactions of drugs more employees in pain therapy

Module 3 OTHER ASPECTS IN THE MANAGEMENT OF PAIN

❖ Acute postoperative pain ❖ Chronic pain and psychiatric disorders ❖ Psychological therapies as adjuvants to the control of pain ❖ Cognitive-behavioral medicine in pain management ❖ Biofeedback and relaxation techniques for control of pain ❖ Placebo and pain ❖ Mindfulness: clinical application in the patient with pain ❖ Misuse of opioids and other substances: Addiction, pseudoaddiction, tolerance ❖ Bioethics in the management of pain ❖ Physical therapy and rehabilitation for pain control. ❖ Evaluation of functionality and dysfunction in the chronic pain ❖ Electrodiagnostic evaluation of acute and chronic pain the painful syndromes ❖ Evoked potentials, reflex H electromyography: indications in Algology ❖ Electrical nerve stimulation ❖ Acupuncture ❖ Development and Organization of a pain clinic ❖ Administration applied to pain medicine ❖ Nursing paper in the area of Algology

Module 4 Selected Topics

❖ Diagnostic pathophysiology, treatment and complications:
❖ Joint pain. Osteoarthritis
❖ Bone pain of non-oncological origin
❖ Osteoporosis
❖ Pain in rheumatological diseases:
❖ Rheumatoid Arthritis
❖ Lupus Systemic Erythematosus
❖ Myofascial pain

- ❖ Diseases of central origin
- ❖ Central pain secondary to spinal cord injury
- ❖ Central cerebral pain: Post EVC, thalamic syndrome
- ❖ Fibromyalgia
- ❖ Complex regional pain syndrome type 1 and 2
- ❖ Phantom pain, ghost sensation and pain in place stump
- ❖ Orthosis and mirror therapy for pain management
- ❖ Peripheral neuropathies
- ❖ Herpes zoster and postherpetic neuropathy
- ❖ Diabetic polyneuropathy
- ❖ Other painful polyneuropathies

Module 5 PAINFUL REGIONAL NON ONCOLOGICAL SYNDROMES

Visceral pain

- ❖ Most common headaches in clinical practice
- ❖ Classification and treatment of primary headaches and high schools
- ❖ Cervicogenic headache
- ❖ Cranial neuralgia
- ❖ Trigeminal Neuralgia
- ❖ Glossopharyngeal Neuralgia
- ❖ Vagal neuralgia
- ❖ Other neuralgia, painful anesthesia
- ❖ Facial pain
- ❖ Intraoral and dental pain
- ❖ Ocular and periocular pain
- ❖ Earache, hemicara and aerodigestive tract
- ❖ Temporomandibular dysfunction
- ❖ Thoracic pain of cardiac origin
- ❖ Thoracic pain of non-cardiac origin
- ❖ Assessment, diagnosis and management
- ❖ Cervicalgias
- ❖ Shoulder pain and upper extremity
- ❖ Abdominal, peritoneal and retroperitoneal pain
- ❖ Pelvic pain in man
- ❖ Pelvic pain in women
- ❖ Associated painful back pain and Acute low back pain
- ❖ Chronic low back pain
- ❖ Discogenic pain
- ❖ Sacroileitis
- ❖ Failed back surgery syndrome
- ❖ Psychological evaluation prior to procedures
- ❖ Hip pain
- ❖ Knee pain
- ❖ Lower pelvic member pain

Module 7 Pain in special population

- ❖ Pain in pediatrics
- ❖ Pain in the Elderly
- ❖ Pain in pregnancy
- ❖ Pain in patients with cognitive disabilities
- ❖ Pain in patients with neurological diseases
- ❖ Pain in the addicted patient
- ❖ Pain in patients with depression
- ❖ Pain in HIV
- ❖ Acute Pain
- ❖ Acute pain management in children
- ❖ Regional Anesthesia Techniques for pain control
- ❖ Acute guided ultrasound: generalities
- ❖ Therapeutic approaches guided by US: Neck
- ❖ US-guided therapeutic approaches: lower back
- ❖ US-guided therapeutic approaches: limbs higher
- ❖ US-guided therapeutic approaches: limbs lower
- ❖ Pain from burns

PHYSIOTHERAPY

Duration: 1 month

Schedule: Monday to Friday 7:00 am – 5:00 pm

Place: In order to acquire the following knowledge, the fellow will rotate in external rehabilitation consultation and hospitalization floor

The fellow will acquire de following knowledge:

- Recognize causes and treatment for muscular and articular pain
- Diagnose MSK pain, myofascial pain syndrome, fibromyalgia, cervical pain, chronic postoperative pain and lymphedema
- Understand and prescribe non-pharmacological treatment for pain

The fellow will acquire the following skills:

- Educate patients and family members in the rehabilitation process of chronic pain
- Make the diagnosis and treatment of the following pathologies: lymphedema, spinal cord injury, fatigue, prolonged rest, associated facial paralysis, sequelae of cerebral infarction (hemiplegia, quadraplegia) frozen shoulder, rotator cuff, amputation, knee and shoulder hip prosthesis, cervical plexopathy and muscular dystrophy

Recommended reviews:

- Chronic and acute unspecific lumbar pain
- Red flags for lumbar pain
- Chronic and acute muscular pain
- Myofascial syndrome
- Articular pain
- Fibromyalgia
- Unspecific cervical pain
- Integral rehabilitation of patients with pain