PAIN MEDICINE - Existing sub-specialization program

WINTER SEMESTER

I Introductory lectures

- Introductory lecture. General advices regarding final research paper in the field of supraspecialization in Pain Medicine
- Promotion of the National clinical guideline of good clinical practice for the diagnosis and treatment of chronic cancer pain

II Anatomy of pain

- Neuroanatomy of nociception
- Anatomy of Pain Pathways

III The Physiology of Pain

- Theories of Pain and the Pathophysiology of Peripheral Nerve Damage
- Pain and Neuroplasticity: The Role of Dorsal Roots
- Deep, visceral, inflammatory, neuropathic pain
- Neurophysiology of acute and chronic pain
- Neurobiology of Pain in Infants and Children, Development of Painful Pathways and Pain Mechanisms

IV Assessment of Pain

- Assessment of Pain, Clinical Evaluation of Pain, Pain Questionnaires and Pain Scales
- Pediatric and neonatal scales

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V Pain management

- A Pharmacotherapy of Pain
- Pharmacotherapy of Pain (Nociceptors, Dorsal Dolumns of the Spinal Cord and Descending Modulation)
- Pharmacotherapy of Pain, Classes of Analgesics, Mechanisms of Action
- NSAID and COX Inhibitors: Pharmacology, Classification, Mechanism of Action, Clinical Application
- Classification and Mechanism of Action of Different Opioids, Pharmacology of Opioids
- Clinical Use of Opioids
- Dependence and Opiophobia
- Topical drugs, Cannabinoids, NMDA Antagonists, Botulimum toxin, Alpha Lipoic Acid – Pharmacology, Classification, Mechanism of Action, Clinical Application
- Antidepressants Coanalgesics for Pain – Pharmacology, Classification, Mechanism of Action, Clinical Application
- Anticonvulsants – Coanalgesics for Pain – Pharmacology, Classification, Mechanism of Action, Clinical Application
- Placebo and Placebo Effect

VI Non-Pharmacological Treatment of Pain

- Transcutaneous Electroneural Stimulation
- Interventional Pain Management
- Topical Anesthesia in Management of Pain in Children
- Non-pharmacological complementary/alternative methods of Pain Management (available methods, mechanism of action and clinical effects of acupuncture)
- The Role of Physical Medicine and Rehabilitation in Pain Management – physical modalities according to the type of pain and patient population

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SUMMER SEMESTER

I Cancer Pain

- Cancer Pain: Etiology, Classification and Assessment of Cancer Pain, Principles of Pain Management, Opioid Rotation
- Pharmacotherapy of Cancer Pain, Management of Breakthrough Pain
- Basics of Cancer Pain Therapy, Radiotherapy, Chemotherapy, Hormon Therapy in Pain Management
- Urgent situations in Cancer Pain Management in the Terminal Phase of the Malignant Disease
- Psychiatric comorbidities Associated With Chronic Pain. Depression and Anxiety in Painful Conditions – Recognition and Therapy
- Pain and Imminent Death
- Existential Dimension of Pain

II Non-cancer Pain

- Acute and Postoperative Pain- Etiology, Assessment, Therapy
- Pain Management in Intensive Care Units
- Acute, chronic and Preoperative Pain Management in Children
- Central Pain, Phantom Pain and Other Phenomena After Amputation
- Osteoarthritis and Rheumatoid arthritis
- Pain during soft tissue infection of the locomotor system
- Back Pain, Neck Pain and Pain in the Upper Extremities: Etiology, Pathogenesis, Therapy
- Abdominal Pain and Genitourinary Pain,

III Headaches

- Epidemiology, Classification, Clinical Presentation
- Pathophysiology of Headaches
- Sudden Onset Headaches
- Chronic, progressive and non-progressive headache
- Therapy of Primary Headaches
- Trigeminal neuralgia and atypical facial pain

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IV. Neuropathic Pain

- Neuropathic Pain - Epidemiology, Etiology, Classification, Characteristics, Clinical Presentation
- Therapy of Neuropathic Pain
- Neuropathic Components in Low Back Pain
- Postherpetic neuralgia
- Diabetic neuropathia, Pathogenesis, Therapy
- Pain in Older Adults
- Transcutaneous electrical nerve stimulation
- Complex Regional Pain Syndromes, Type I and II

V. Special Patient Populations

- Obstetric Pain

VI. EPIDEMIOLOGY OF PAIN. Methodology in research related to pain medicine.

- Disease surveillance and the importance of measures of morbidity (prevalence, incidence rates, cumulative incidence, and person-time at risk) and mortality (mortality rate and case-fatality) in pain medicine. Standardized rates. Burden of disease (DALY, YLD, YLL)
- Measuring instruments: validation and cultural adaptation of questionnaires
- Questionnaire Construction
- Application of measures of morbidity and mortality in pain medicine according to the type of research. Critical analysis of publications
- Types of studies (observational and interventional studies). A general overview of the importance of epidemiological research in pain medicine. The significance of a descriptive study in research related to pain medicine (case study, case series study, ecological study). Study design. Advantages and disadvantages.
  - Analytical studies. The significance of case-control studies and case-control studies based in a defined cohort (nested case-control study, case-cohort study) in research related to pain medicine. Study design. Potential biases in these studies (selection bias, information bias, confounding). Odds ratio.

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- The significance of experimental studies (clinical trials, field experiment, community experiment) in research related to pain medicine. Study design. Randomisation and masking. Problems posed by noncompliance.
- Application of cross-sectional studies, case-control studies, hybrid studies, cohort and experimental studies. Critical analysis of publications.
- The significance of systematic review and meta-analysis in pain medicine
- Application of descriptive study, systematic review and meta-analysis in pain medicine. Critical analysis of publications.
- How to write a scientific paper in pain medicine
- Ethics. Scientific misconduct and how to prevent it (good mentorship, respect for human subjects involved in medical research, good clinical practice, research data management, the right to authorship, conflicts of interest)
- The natural history of disease: ways of expressing prognosis.
- Research Methodology of Pain
- Epidemiology of non cancer pain (low back pain)

VII LEGAL FRAMEWORK OF PALLIATIVE MEDICINE AND MEDICINE

- The rights of patients in accordance with the Law on Health Care, the Law on health insurance and the Law on Patients' Rights
- Rights, obligations and types of responsibility of health workers
- Criminal liability of health workers