CHRONIC PAIN

Scientific supervisor: **Asatullayev Rustamjon Baxtiyarovich**
Student: **Imomova Mohigul Sirojiddinovna**

Abstract: *Due to its high prevalence and diversity of its forms, chronic neocancer pain is noted to have become a serious medical problem. Chronic painis regarded as an independent disease, not a symptom of any disease, which calls for special attention and complex etiopathogenetic treatment. The paper gives the characteristics and causes of pain syndromes and an algorithm for the treatment of chronic pain. It is stated that treating patients with chronic neocancer pain requires that its clinical features be kept in mind; moreover, treatment should be itself safe andeffective. Drugs must be used for a long period, by strictly following the schedule in individual doses.*

Keywords: *chronic pain, treatment, narcotic analgesic, central sensitization, neurophysiology, neuropathic pain, medicine, pain.*

Introduction

Among chronic pain syndromes, the most common are pain due to joint disease, back pain, headache, and neuropathic pain. Doctors are faced with a situation in which identification and elimination of damage is not accompanied by the disappearance of pain syndrome. In conditions of chronic pain syndrome, as a rule, there is no direct connection with organic pathology, or this connection is unclear, uncertain. According to the definition of experts of the International Association for the Study of Pain, chronic pain is pain lasting more than 3 months and continuing beyond the normal period of tissue healing. Chronic pain began to be considered not as a symptom of any disease, but as an independent disease requiring special attention and complex etiopathogenetic treatment.

Today we know for sure that the formation of a complex multi-component pain sensation, including not only sensory and motivational-affective components, but also vegetative and motor reactions, is mediated by the nociceptive system, consisting of sensory neurons that have a complex hierarchical organization and ensure the perception, encoding, conduction and analysis of damaging stimuli.

However, pain is a subjective phenomenon, and its severity is not always directly related to the intensity of the nociceptive afferent flow. The perception of pain depends not only on the location and nature of the injury, but also on the conditions or circumstances under which the injury occurred, on the psychological state of the person. The sensation of pain can be preserved and supported, including due to the expected unpleasant consequences of the injury, which are often exaggerated by the person, and in some cases even overly dramatized. The patient's personal position and beliefs, his/her individual coping strategies, and attitude toward the treatment affect both the intensity of pain and the effectiveness of therapy. That is why, within the framework of the biopsychosocial model, pain is considered as a result of a two-way dynamic interaction of biological (neurophysiological

processes of coding and transmission of nociceptive stimuli) and psychosocial factors. According to this model, behavior, emotions, pain, and even simple physiological reactions change depending on a person's attitude toward the events that occur.

The result of such interaction will be the individual nature of the pain sensation and the form of the patient's response to pain. All pain syndromes, depending on the etiology and pathogenesis, can be conditionally divided into three main groups: nociceptive, neuropathic, and psychogenic. In real life, these pathophysiological variants of pain syndromes often coexist.

Nociceptive pain is pain that occurs when tissues are damaged and nociceptors are activated - free nerve endings programmed to perceive various damaging stimuli. Examples of such pain are postoperative pain, pain due to trauma, angina in patients with coronary heart disease, pain due to gastric ulcer, pain due to arthritis and myositis. Along with complaints of pain, the clinical picture of patients with nociceptive pain always shows zones of primary and secondary hyperalgesia (areas with increased pain sensitivity). The development of primary hyperalgesia is based on the phenomenon of nociceptor sensitization (increased sensitivity of nociceptors to the action of damaging stimuli). Symptoms of primary hyperalgesia can be found not only in the skin, but also in muscles, joints, bones and internal organs. Secondary hyperalgesia occurs as a result of increased excitability of nociceptive neurons in the CNS structures (central sensitization). The pathophysiological basis for sensitization of nociceptive neurons in the dorsal horns of the spinal cord is the long-term depolarizing effect of glutamate and neurokinins released from the central terminals of nociceptive afferents due to intense constant impulses coming from the area of damaged tissue. Recent years have also been marked by the discovery of the important role of immune and glial cells and the cytokines, chemokines, and growth factors they release in this process. The resulting increased excitability of nociceptive neurons can persist for a long time, contributing to the expansion of the area of hyperalgesia and its spread to healthy tissues. In addition to sensitization of nociceptive neurons in the dorsal horn, tissue damage initiates increased excitability of nociceptive neurons in higher centers, including the thalamic nuclei and the somatosensory cortex of the cerebral hemispheres.

Neuropathic pain, according to the definition of experts from the International Association for the Study of Pain, is a consequence of primary damage or dysfunction of the nervous system, however, at the II International Congress on Neuropathic Pain (2007), it was proposed to amend the definition. According to this proposal, neuropathic pain includes pain arising as a result of direct damage or disease of the somatosensory system.

Neuropathic pain may occur with damage to both the peripheral nervous system and the central structures of the somatosensory analyzer. The causes of damage to the peripheral nervous system can be metabolic disorders, trauma, intoxication, infection, mechanical compression, vitamin deficiencies. The causes of neuropathic pain with damage to the structures of the central nervous system (in domestic literature, such pain syndromes are also called "central pain") are considered to be spinal cord and brain injuries, ischemic and hemorrhagic strokes leading to a deficit of somatosensory sensitivity, multiple sclerosis,

syringomyelia, etc. Neuropathic pain most often occurs in diabetic polyneuropathy and postherpetic neuralgia. Not only neurologists encounter painful polyneuropathies, this pathology is often observed in rheumatic diseases - nodular periarteritis, rheumatoid arthritis, systemic lupus erythematosus. At least a third of cancer patients suffer from neuropathic pain due to tumor invasion of nerve structures, nerve damage during chemotherapy, radiation therapy or extensive surgical interventions.

Narcotic analgesics are a class of drugs whose mechanism of analgesic action is due to binding to opioid receptors. According to analgesic activity, narcotic analgesics are divided into weak (codeine), medium (nalbuphine) and strong (morphine, buprenorphine, fentanyl). Opioid analgesics are prescribed to patients with chronic pain when previously administered analgesic therapy is ineffective or when there are contraindications for the use of NSAIDs due to a high risk of developing nephro-, gastro- or hepatotoxicity.

For pain treatment, both non-selective NSAIDs are used - diclofenac sodium, aceclofenac, ketoprofen, lornoxicam, ibuprofen, and selective COX 2 inhibitors - nimesulide, celecoxib, meloxicam. Nimesulide (Nise) is one of the most widely used NSAIDs in Russia with selective action against COX 2. The pronounced anti-inflammatory and analgesic effect of nimesulide allows it to be successfully used in rheumatic diseases (osteoarthritis, rheumatoid arthritis, psoriatic arthritis, gout), back pain and other diseases accompanied by pain syndrome. Nimesulide has a lower risk of developing gastropathy compared to traditional NSAIDs [25]. By inhibiting the synthesis of interleukin 6 and urokinase, nimesulide also prevents the destruction of cartilage tissue, which makes it preferable if long-term use of NSAIDs is necessary.

Conclusion

Chronic pain (chronic pain) is a type of long-lasting pain that seriously affects human health and quality of life, usually lasting more than three months. This condition can occur as a result of various diseases of the body, injuries or dysfunction of the nervous system. Chronic pain affects not only the physical, but also the mental and emotional state, causing depression, stress and sleep disorders.

There are many different types of chronic pain today, including back and lower back pain, arthritis-related pain, migraines, neuropathic pain, and fibromyalgia. These pains create serious limitations in the daily life of patients, affecting work activities, social relations and quality of life in general. Therefore, effective management of chronic pain is an important task.

Treatment and management of chronic pain are multifaceted and are tailored to the individual needs of the patient. Medications, physical therapy, rehabilitation exercises, acupuncture, massage, psychotherapy, and a healthy lifestyle can help reduce pain.

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