

CHARACTERISTICS OF PAIN SYNDROME IN CHILDREN

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ABSTRACT

One of the most common symptoms of diseases is pain. One of the achievements of a pediatrician is to be able to correctly assess pain in time and provide timely help. This is the current state of the art of pain physiology information, humoral theories on the development of pain syndrome, clinical manifestations of neuropathic and nociceptive pain are given.

The article presents classification of pain syndrome in children, assessment of pain condition and methods of combating it in pediatric practice.

Key words : pain, pain assessment, analgesics,

Pain and its equivalents lead to children needing medical attention.

One of the problems of pain syndrome in pediatrics is the lack of timely referral to doctors, treatment at home, lack of qualified doctors, lack of qualified specialized centers for providing assistance. Examination and diagnosis of pain in pediatrics is one of the urgent tasks. It is being intensively studied in the following areas: pediatric surgery, oncology, anesthesiology, neurology, cardiology, gastroenterology, rheumatology. Pain syndrome in children is associated with pathogenic influences, children feel unwell, and at the same time, complex changes in the functioning of organs may be observed.

Motor, vegetative and affective changes are observed during pain. Young children do not feel pain much, because the myelination of nerve fibers has not been restored ; children begin to remember themselves after 4-5 years of age. Therefore, all the problems are associated with surgical procedures, So it's important to determine early on whether a child feels pain: if the child is sleeping or playing, the child won't feel any pain, because they don't lie.

The physiological nature of pain is associated with the body's defense mechanisms, that is, with the presence of an inflammatory process in the body. Under the influence of a pain signal, all the body's defenses are mobilized and the function of the affected organ is disrupted.

Classification of pain syndrome:

Pain can be: epicondyle or protachy, nociceptive or neuropathic, acute or chronic.

Epicritic pain ("feeling of pain, "quick, reporting") occurs under low and medium intensity effects.

Protopathic pain ("slowly") occurs due to severe and "large-scale" fragmentation.

Nociceptive pain is caused by the effect of a certain factor (mechanical injury, inflammation, etc.) on the peripheral pain center.

Neuropathic pain results from dysfunction or organic damage to any part of the nervous system.

Nociceptive pain is often acute, neuropathic pain is chronic. Sometimes nociceptive and neuropathic pain occur together (in ulcerative diseases and cholelithiasis, etc.). Functioning of pain reception. Pain sensitivity is caused by myelinated fibers of the A δ group and unmyelinated fibers of the C group. These fibers are activated by severe pain, and when blocked, pain sensitivity disappears. These fibers innervate the skin, deep tissues and internal organs. The endings of painful nerve fibers are unevenly distributed in the organs. These fibers, like a ring, cover the skin, they are more abundant in parenchymal organs, in the lining of internal cavities (pleura, peritoneum, inside the skull). But they are less abundant in the muscle layer, tendons, and vascular endothelium of the eyeball. There is no pain innervation in the layer of brain tissue and the eyeball, so pain is not felt.

In leprosy, the protective myelin sheath of the nerves is damaged by bacteria, and due to the loss of pain sensation, the affected part of the body can be injured. Currently, the study of pain is based on the achievements of neurophysiology and neurochemistry. The mechanism of pain formation (nociceptive system) and the mechanism of pain control (antinociceptive system) are distinguished. The function of the antinociceptive system is to reduce pain perception; this system is activated in severe pain, fear, and excitement. The neurogenic and humoral mechanisms of the antinociceptive system are interconnected. The neurogenic mechanism has the property of blocking pain impulses in the nociceptive system. Humoral mechanisms are expressed in the opioidergic, serotonergic, and noradrenaline systems of the brain.

Neuropathic pain can be peripheral and central, accompanied by a violation of sensitivity: **hyperesthesia** (increased sensitivity to painful stimuli), **hyperalgia** (painful reaction becomes stronger); **hyperpathy** (stronger response to subjective stimuli); **dysesthesia** (spontaneous pain in the absence of external stimuli); **paresthesia** (weak pins and needles or sensation of this condition without external stimuli); **neuralgia** (trigeminal, postherpetic). **Allodynia** - pain in response to a stimulus, but this condition does not occur under normal conditions. Infants feel and remember pain. It has been established that the incomplete myelination of nerve fibers does not protect infants from the perception of pain. Adolescents watch TV, play on

the computer, read books to distract from the perception of pain. Children often cannot fully describe their pain perception due to some objective reasons, may speak incorrectly. They are afraid of undergoing additional examinations and treatment. Children with pain syndrome often undergo surgical procedures, analgesics do not give effect, 2/3 of children have been found to experience pain after surgery . There are children with chronic recurrent musculoskeletal, headache and abdominal pain. It has been found that one of the family members of these children suffers from chronic pain. Such patients should undergo a comprehensive examination with the participation of specialists and a neurologist, psychologist. **Treatment** Pain can occur in children in different ways, after treatment the pain disappears, in some children it does not give effect. In severe patients with severe pain, epidural anesthesia is performed or intravenous drip, but this should be done under the supervision of an anesthesiologist. In hospital settings, analgesics are usually administered intramuscularly, but children do not like this method. Therefore, painkillers should be administered via enema, suppository, or topical spray.

Non-narcotic analgesics:

These include: analgin, baralgin, moxigan and nonsteroid drugs (ibuprofen, indomethacin, ketorolac, etc.), which are used to assess the level of pain in children of early age.

Physiologist reacts: screaming, can be strong, long-lasting, the nature of the pain - changes are observed on the face, paleness, raising eyebrows, moving eyelids, pinching the nose, stretching the lips, moving the tongue. Changes such as increased heart rate, increased breathing, and profuse sweating are observed. In mild cases, simple analgesics are used per os: paracetamol, ibuprofen, but if the pain is severe after trauma operations and lasts a long time, these drugs do not have an effect. When given orally, paracetamol acts after 15-30 minutes, is considered safe, and can also be given to patients with bronchial asthma. For children, it is best to give it in the form of syrup, powder, tablets. Syrup bottles are supplied with dosing spoons and are available for children from 3 months to 12 years old. Cefekon®D (rectal suppository). Paracetamol – 10–15 mg/body weight orally every 4 hours or 20 mg/body weight rectally every 6 hours. If there is no effect, additional tests should be performed. For children with mild pain, ibuprofen is an effective and safe drug, starting from 3 months of age at 10 mg/body weight (daily dose – 20–40 mg/body weight). Ibuprofen is available in syrup form for children (ibufen, nurofen for children – 100 mg, 5 ml) and tablets (200–600 mg). The following nonsteroidal drugs can be used for children: diclofenac, ketorolac, naproxen. For children from 12 years of age, for acute pain, inflammation, hyperthermia, headache, algodysmenorrhea, ibuprofen arginate (Faspic) can be used, it is effective and safe. In addition, Faspic contains L-arginine, which has

gastroprotective properties. Nonsteroidal anti-inflammatory drugs are effective in toothache, muscle and joint pain, and injuries.

Promedol or tramadol are often used to relieve and relieve chronic pain in children. Promedol lasts for 4-6 hours. Therefore, the injection can be repeated, but frequent administration of Promedol can lead to cumulation. has the characteristic of reducing respiratory function. nausea, vomiting and urinary retention are observed.

Tramadol is a synthetic drug, recommended for use in children from 1 year of age . It is used for mild pain. Aspirin (acetylsalicylic acid) is not recommended for children, as there is a risk of developing Reye's syndrome, thrombocytopenia with hemorrhagic syndrome, and hypoglycemia.

Inhalation anesthetics : nitrogen oxides, methoxyflurane .

Nitrous oxides are used for anesthesia during diagnostic and other procedures in children.

Nitrous oxide is a short-acting inhalation gas with analgesic effects, characterized by a rapid onset and rapid cessation of action. It is used in a 50:50 ratio mixed with oxygen ; Nitrous oxide has a synergistic effect when used in combination with other analgesics and sedatives. Before use You should not eat.

Methoxyflurane is an anesthetic and has analgesic properties at low concentrations. It can be used for anesthesia in an outpatient setting if there are contraindications to intravenous administration for certain reasons.

In minor surgical procedures (vein catheterization, spinal puncture, or bone marrow aspiration), local infiltrative anesthesia is performed with lidocaine solution or lidocaine with adrenaline. Repeated use of local anesthetics can cause toxic effects (methaemoglobinemia in infants). Fastum-gel , Voltaren- emulsion , and other ointments are widely used in children's practice. In recent years, local anesthetics have been used in pediatric dentistry to reduce pain and relieve itching during teething in children, namely, the combined drug "Kamistad", which is a solution of lidocaine and chamomile flowers, relieves local pain, has anti-inflammatory effects, antiseptic properties, and accelerates wound healing. It is used from the age of 3 months, a 0.5 cm long strip of the drug is poured into the mucous membrane of the baby's teeth.

Injections and pain. The occurrence of pain syndrome as a result of injections in young children is one of the factors that contribute to the development of stress. Therefore, in the treatment of children, it is recommended to reduce the number of injections and use a stepwise method (starting with the injection form of the drug and then switching to oral administration).

Psychological intervention in combination with analgesics reduces pain, reduces stress. In children with recurrent joint pain, chondroprotectors are prescribed. Structuvit is used for younger children, and Teraflex and ointments containing

chondroprotectors, for example, Chondroxide, which contains dimethyl sulfoxide, are used for older children. In some cases, additional therapy is used - antidepressants and corticosteroids.

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