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PEDIATRICIAN'S TACTICS FOR ABDOMINAL PAIN IN CHILDREN

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Abstract: Functional abdominal pain in children and adolescents is characterized by a wide range of manifestations, does not belong to a separate nosological form, has clinical, prognostic significance and maintains the interest of internists in diagnostics and treatment. Given the wide variety of signs of the systemic nature of the process in childhood, it is advisable to comprehensively examine patients with abdominal pain. Of fundamental importance for pediatric practice is an accurate syndromic diagnosis, which determines the need and strategy of treatment, while the tactical task of the doctor is to choose a drug with the greatest therapeutic and least toxic potential.
Keywords: children, abdominal pain, trimebutine.

INTRODUCTION

According to the latest research, abdominal pain is a clinical problem often encountered in gastroenterological practice among children and adolescents, and is the main reason for seeking medical attention and disrupting a child's social adaptation [1]. Experts from the International Association of Pain (IASP) defined it as an unpleasant sensation and emotional experience associated with actual or potential tissue damage; as one of the types of sensitivity that arises as a result of pathological impulses entering the central nervous system from the periphery without a single universal stimulus [2, 3].

MATERIALS AND METHODS

Clinical example. A 7-year-old boy was admitted to the emergency department complaining of sharp, spasmodic abdominal pain, nausea, and vomiting with bile. From the medical history: episodes of abdominal pain appeared a year ago, lasting from 15 to 30 minutes, recurring at different time intervals, not associated with food intake, physical activity, or defecation, and not reduced by changing body position. According to the patient's mother, there was no weight loss, fever, chills, change in urine and feces color, or jaundice. Trial use of antacids and antispasmodics was not used. It was possible to establish that the day before this pain attack, the boy was at a birthday party for his friend, where, naturally, there were dietary errors. Physical examination: temperature 36.6 °C, no intoxication, lies on back, legs bent at the knees. The abdomen is tense, painful on palpation in the periumbilical area, intestinal sounds are audible.

RESULTS AND DISCUSSION

Thus, despite the fact that the morphological substrate of abdominal pain could not be identified in this patient, the described situation is typical and is often observed in pediatric practice. Summarizing the results of the anamnesis and the actual objective assessment of the child's examination, we can suspect functional disorders in the biliary tract (gallbladder) system, which to this day retain a leading position in the structure of gastrointestinal diseases in children. Other functional pathology of the gastrointestinal tract (functional gastric dyspepsia, irritable bowel syndrome) was excluded based on a detailed analysis of the clinical picture and clear diagnostic criteria for functional diseases of the gallbladder (according to the official recommendations of the Rome Consensus III and IV).

The causes of abdominal pain in children are the subject of intensive research, but many questions remain unanswered. At present, very convincing data have been obtained that pain is an objective human sensation formed by central structures on the perception of impulses coming

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from the periphery [1, 4]. The latter are assessed by sensory receptors, the pain message is transmitted through primary afferent fibers to the spinal cord, where it enters the synapses of special areas of the midbrain, the pons and the diencephalon through ascending nerve pathways. From these lower parts of the central nervous system, nociceptive (painful) notification can be sent to the limbic and somatosensory areas of the cerebral cortex, where pain is detailed [5].

According to the latest data, the signal receptor apparatus includes two categories of sensory receptors. The first group of receptors is located in the cells of peripheral organs and tissues: the colon, small intestine, ureter, bladder, bile ducts, heart - and works on the principle of a specific reaction to harmful stimuli [2]. Another family of afferent visceral receptors in pain control mechanisms does not react in a standard way, but only to a high discharge of impulses. With a normal range of irritation, receptors transmit physiological information about the organ (mechanical, chemical, thermal or osmolar). In response to extreme stimulation, the susceptibility of the receptor apparatus increases, pathological activation of these receptors occurs with the induction of hypersensitivity, which is considered the main initiating factor in the implementation of pain [3].

According to a number of authors, the most important role is played by specific nociceptive receptors [4]. The more specific the receptor connections, the sharper and shorter the pain will be. Subsequently, in accordance with the universal patterns of the signal cascade, additional nonspecific receptors are connected with recurrent stress exposure. In this case, abdominal pain intensifies, becomes more persistent, and strong interconnections are formed in the central nervous system that support the persistence of pain. Psychological factors that determine the complex components of psychosocial dysfunction are also important in predicting the transition of pain to the chronic phase [4]. This information is fundamentally important clinically, since it explains why chronic pain is much more difficult to treat than acute pain, and substantiates the need for the earliest possible administration of drugs that eliminate abdominal syndrome.

Pathogenetic mechanisms of formation of pain sensations in patients with functional gastric dyspepsia, functional disorder of the gallbladder, irritable bowel syndrome are obviously multifactorial and have not been fully studied [5]. However, today visceral hypersensitivity of the above-mentioned organs is considered a universal and relevant pathophysiological mechanism in relation to abdominal pain [2]. Visceral hypersensitivity is the cause of formation of excessive corrective response – excessively strong contraction and/or stretching of the organ wall above the nociceptive threshold. Visceral hypersensitivity also develops as a result of release of biochemical and immunologically active mediators (hydrogen and potassium ions, serotonin, histamine, prostaglandins, bradykinin) into the intercellular fluid surrounding pain receptors. This, in turn, disrupts the physiological and chemical environment around nociceptors and increases their excitation [3].

CONCLUSION

Thus, the data presented in this article clearly show that abdominal pain is a serious problem for internists, requiring a differentiated approach. Most often, it occurs with functional disorders of the gastrointestinal tract and is not always amenable to standard therapy. When using antispasmodics, a number of problems arise, the main ones being the choice of drug, determination of the daily dose and duration of treatment.

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