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ОСОБЕННОСТИ ЛЕЧЕНИЯ И ПРОФИЛАКТИКА ОСТРОГО СРЕДНЕГО ОТИТА У ПАЦИЕНТОВ

***Абстракт:** В данной статье представлен обзор клинических особенностей, осложнений и лечения острого среднего отита, особенно в контексте инфекционных заболеваний, таких как скарлатина и корь. Описывается различие между поздним и ранним средним отитом, а также специфические характеристики гриппозных отитов, включая геморрагическую форму воспаления. Статья также рассматривает некротический отит и его последствия, включая потенциальное поражение лабиринта и глухоту у детей.*

***Ключевые слова:** острый средний отит, барабанная полость, парацентез, лечение.*

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FEATURES OF TREATMENT AND PREVENTION OF ACUTE OTITIS MEDIA IN PATIENTS

***Abstract:** This article provides an overview of the clinical features, complications and treatment of acute otitis media, especially in the context of infectious diseases such as scarlet fever and measles. The difference between late and early otitis media is described, as well as the specific characteristics of influenza otitis media, including the hemorrhagic form of inflammation. The article also discusses necrotizing otitis media and its consequences, including potential labyrinthine involvement and deafness in children.*

***Key words:** acute otitis media, tympanic cavity, paracentesis, treatment.*

In a typical favorable course, recovery occurs with the elimination of the inflammatory process and complete restoration of hearing. The small perforation of the eardrum closes, leaving almost no trace. When a dense scar forms, calcareous salts are often deposited in it - petrificates that look like white spots. In case of deviations from the typical course of otitis, other outcomes are possible: adhesions and adhesions between the eardrum and the medial wall of the tympanic cavity, between the auditory ossicles, which causes their stiffness and decreased hearing (adhesive otitis media); persistent dry perforation (dry perforated otitis media); transition to a chronic purulent form with persistent perforation and periodic suppuration from the ear; complications in the form of mastoiditis, petrositis, labyrinthitis, facial nerve paresis, intracranial complications, etc. In infants, the mechanism of infection is the same, but not only infection from the nose and nasopharynx, but also food masses from regurgitation enter the middle ear.



Fig. 1 - Acute otitis media.¹

This is also facilitated by the fact that in childhood the auditory tube is wide and short. Another mechanism for the occurrence of otitis media is also possible: the temporal bone in newborns and infants is richly vascularized, contains a large amount of bone marrow, and inflammation in the ear can be of the nature of osteomyelitis. In the occurrence of acute otitis media in children, an important role is played by infectious diseases (measles, scarlet fever, influenza). No less important as a source of infection are the adenoids, in which viruses often grow, causing inflammation in the middle ear. Mechanical closure of the mouth of the auditory tube by adenoid growths should also be taken into account when deciding the cause of otitis media in a child. Starting from the age of one year, when a sick child can already determine the location of the pain, the doctor can quite easily determine the source of the disease.

The behavior of a child with otitis media is almost always depressed, he sleeps a lot, the function of the gastrointestinal tract is disrupted, diarrhea and vomiting appear, and the child loses a lot of weight. One should keep in mind the possibility of meningeal symptoms accompanied by blackouts. This condition, unlike meningitis, called meningism, develops not due to inflammation of the meninges, but due to intoxication of the central nervous system. Meningism disappears as soon as the eardrum is perforated and the middle ear cavities are emptied of pus. Acute otitis media in children goes through the same stages as in adults. The peculiarity of otitis in children is that in them, more often than in adults, healing can occur without perforation of the eardrum. It should be taken into account that in infants the eardrum easily turns red after cleaning the ear and when the child cries. In older children, the otoscopic picture is similar to that in adults. A thicker, cloudier eardrum in children does not always reflect the condition of the eardrum.

In case of suppuration, differential diagnosis should be made between otitis media and external otitis. (Fig. 1) For acute otitis media in a child, the treatment is the same as for an adult. At the same time, paracentesis is indicated for children at an earlier stage, and an antibiotic solution and a hydrocortisone suspension must be injected immediately into the tympanic cavity through the incision. When perforation occurs in a child, more often than in an adult, granulations appear in the tympanic cavity, which can close the perforation and disrupt the outflow. Therefore, vasoconstrictor drops should be poured into the ear, for example 0.1% epinephrine solution (3 drops 2 times a day). After this, clean the ear with a cotton

¹ <https://idoctor.kz/illness/1210-ostriyiy-sredniy-otit>

swab. In the group of acute otitis media in infectious diseases, the most severe changes are observed in septic-toxic forms of scarlet fever, especially when there are necrotic lesions in the pharynx, as well as, although less pronounced, in measles and influenza.

The course of such otitis is more severe due to a decrease in the body's resistance under the influence of the causative agent of an infectious disease, the penetration of which into the middle ear usually occurs through the auditory tube. In infectious diseases, a distinction is made between late, or secondary, otitis media, which occurs in the late period of an infectious disease; and early, developing in the initial period of the infectious process and having the characteristic features of the underlying disease. Specific influenza otitis is characterized by a hemorrhagic form of inflammation, expressed in a sharp dilation of the vessels of the external auditory canal and middle ear with the formation of extravasates (hemorrhages) under the epidermis of the skin of the bone part of the external auditory canal and the eardrum.

Such extravasates are called hemorrhagic blisters, or bullae; they are clearly visible during otoscopy. With septic-toxic forms of scarlet fever and measles, the process in the ear develops unnoticed. Pain syndrome is often absent, which can be explained by the rapid necrotic destruction of the eardrum. The only sign of the disease is profuse suppuration from the ear with a pungent putrid odor due to bone involvement in the process. Necrotizing otitis is characterized by permanent hearing loss of a mixed type, and in some cases symptoms of damage to the labyrinth are added. With bilateral damage in young children, necrotizing otitis leads to deaf muteness.

Treatment. Carrying out a set of measures aimed against both the underlying disease and its local symptoms. Timely and correct (sufficient in dosage and duration) use of antibiotics for diseases such as scarlet fever and measles has now reduced the number of purulent necrotizing otitis media in these infections to a minimum. The indication for surgical intervention is the development of necrosis of the mastoid process, the purpose of the operation is the removal of necrotic tissue and drainage of the cavities of the middle ear.

Treatment. In the acute period, bed rest is indicated. Treatment of otitis begins with antibacterial therapy (penicillin injection 500,000 units 6 times a day or ampiox tablets 0.5 g orally 4 times a day). A semi-alcohol compress on the ear area at night has a good pain-relieving effect, and a dry insulating bandage during the day.

In the pre-perforation period, instillation of a warm 5-10% phenolglycerol solution into the ear has a good analgesic effect; the appearance of fluid in the ear canal (exudate) requires immediate cessation of the administration of drops due to the formation of carbolic acid and a cauterizing effect. An "intra-ear compress" is also indicated by introducing a gauze strip moistened with 3% boric alcohol. Vasoconstrictor drops (sanorin, galazolin, naphthyzin, etc.) must be instilled into the nose 3-4 times a day to normalize the function of the auditory tube. Analgesics are prescribed according to indications. Prolongation of the acute period in

children is an indication for paracentesis of the tympanic membrane. From the moment of perforation, treatment is additionally aimed at ensuring good outflow from the ear by introducing into the ear canal 2-3 times a day dry or moistened (20% sulfacyl, 3% hydrogen peroxide) gauze turunda after toileting the ear. The use of boric alcohol during this period is contraindicated (increased pain).

Treatment of acute otitis media

Goal of treatment	Drug groups	Examples of drugs and dosage regimen
Restoring the function of the auditory tube (unloading - intranasal therapy)	Irrigation-elimination therapy	Toilet the nose with isotonic sodium chloride solution or sea water
	Vasoconstrictors (decongestants)	In children under two years of age - based on phenylephrine. In children over two years of age - based on xylometazoline, oxymetazoline (0.01 and 0.025%)
	Anti-edematous, anti-inflammatory therapy	Intranasal glucocorticosteroid drugs: mometasone furoate, beclamethasone, fluticasone furoate, fluticasone propionate, budesonide
	Mucolytic therapy	Products based on N-acetylcysteine,
	Topical antibacterial therapy	carbocisteine
Pain relief	Systemic non-steroidal anti-inflammatory drugs	Framycetin – spray (isophra) – 1 injection × 3 times a day for no more than 10 days
	Local therapy	Paracetamol 10–15 mg/kg/dose Ibuprofen 8–10 mg/kg/dose
	Paracentesis of the eardrum	—
Eliminating the pathogen	Systemic antibacterial therapy for bacterial acute otitis media	Amoxicillin 40–50 mg/kg/day in 2–3 doses; Amoxicillin/clavulanic acid 45–50 – 80–90 mg/kg/day in 2–3 doses Cephalosporins (cefuroxime axetil, cefibuten, cefixime) Macrolides (azithromycin, clarithromycin)

Prevention. It is recommended to take timely measures to normalize nasal breathing and the functions of the auditory tube: removal of polyps, elimination of a deviated nasal septum, etc., removal of adenoids in children. Timely and complete treatment of acute respiratory diseases and sinusitis is of great importance.

The main conclusion that can be drawn is the importance of diagnosis and treatment of this disease. It emphasizes the importance of differential diagnosis

between otitis media and external otitis, treatment features in children and adults, and describes severe changes associated with infectious diseases, such as septic-toxic forms of scarlet fever, measles and influenza.

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