MODERN MEDICINE AND PRACTICE
https://inovatus.es/index.php/ejmmp
EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE
Vol. 3 No. 09 (Sep - 2023) EJMMP ISSN: 2795-921X

ACUTE SINUSITIS: MODERN PRINCIPLES OF ANTIBIOTIC THERAPY

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Annotation: In this article, the reasons and consequences of the modern principles of antibiotic therapy for acute sinusitis are discussed.

Key words: Sinusitis, acute rhinitis, influenza, infectious diseases, antimicrobial therapy, rhinosinusitis, staphylococci, streptococci, enterococci, pneumococcus and fungi.

Sinusitis (novolat. sinusitis, from lat. sinus - sinus and lat. -itis - suffix meaning inflammation; synonyms: sinuitis, rhinosinusitis) - inflammation of the mucous membrane of one or more paranasal sinuses. It can occur as a complication in acute rhinitis, influenza, other infectious diseases, as well as after trauma to the facial area. Sinusitis can be caused by both viruses and bacteria. The main symptoms are heaviness in the paranasal or frontal region, pain with sudden movements of the head, thick discharge from the nose, and fever. In children, the development of sinusitis should be suspected if, after the symptoms of a runny nose subside, after a few days the temperature rises again and thick discharge from the nose appears. Sinusitis is most often diagnosed in children aged 3-15 years. Treatment for sinusitis includes sinus drainage and antimicrobial therapy; viral sinusitis does not require antibiotics.

The main goals of sinusitis treatment are to eradicate (eliminate) the infection, reduce the severity and duration of symptoms, and prevent complications. This is achieved by ensuring the drainage of the sinuses and the systemic use of antibacterial drugs with the obligatory consideration of the sensitivity of microorganisms to them.

Sinus drainage can be provided by conservative and surgical methods. ICU patients with sinusitis are treated most aggressively to avoid serious septic complications.

Surgical puncture of the sinuses is used to remove thick purulent contents of the sinuses. The task of surgical drainage is to clear the sinuses of pus and obtain material for seeding for sensitivity to antibiotics. Surgical drainage should be used in cases where conservative methods fail, symptoms persist for a long time, or when sinusitis is complicated. Another indication for sinus puncture is the difficulty in choosing an antibiotic, the low effectiveness of antibiotic therapy. In this case, it is possible to more accurately select a drug to which microbes will not have resistance.

Symptomatic and supportive therapy includes:

a) Humidification of the air in the room.

b) Drink plenty of water.

c) Smoking ban.

d) Balanced diet.

e) Non-narcotic analgesics.

Antihistamines are not recommended and have not been shown to be beneficial in sinusitis. Local vasoconstrictor drugs (oxymetazoline, etc.) can be used to reduce swelling of the mucous membrane. The duration of their use should not be more than 3 days in order to avoid rebound edema.

15-21 day courses of topical steroids can reduce symptoms compared to placebo. Systemic steroids have shown no benefit in sinusitis. Topical ipratropium bromide 0.06% may be used to reduce rhinorrhea (nasal discharge). Perform nasal lavage with antiseptic solutions (for example, miramistin, furatsilin, sodium hypochlorite).

Antimicrobial therapy

Rhinosinusitis caused by viruses does not require antibiotics. Standard drugs for the treatment of viral sinusitis include topical steroids, decongestants, mucolytics, and nasal saline solutions (sprays).

Antimicrobial therapy is the mainstay of treatment for bacterial sinusitis. The choice of antibiotic depends on whether the sinusitis is acute, chronic, or recurrent. This should take into account its effectiveness, cost and the likelihood of side effects.

In clinically diagnosed cases of acute sinusitis, few data from randomized controlled trials support the effectiveness of antibiotics. Particularly significant is the role of antibiotic therapy in the treatment of sinusitis of the maxillary sinus (sinusitis), confirmed by radiographic and bacteriological studies.

Based on a review of the literature, Kaper et al concluded that no study has sufficiently demonstrated whether the efficacy of antibiotic therapy in recurrent acute rhinosinusitis is different from that in patients with primary acute sinusitis. Thus, the authors concluded that the prescription of antibiotics in cases of recurrent sinusitis should be based on the same criteria as in acute episodes of this disease.

Antibiotics are indicated for sinusitis suspected of being bacterial, including severe sinusitis or involving the frontal, ethmoid, and sphenoid sinuses, due to the greater risk of complications in these sites. Penicillins, cephalosporins and macrolides show the same efficacy. Many experts recommend a 10- to 14-day course of amoxicillin 500 mg three times a day as first-line therapy. When prescribing an antibiotic, the sensitivity of the flora and its resistance to this drug must be taken into account.

The effectiveness rating of antibiotics for bacterial sinusitis is approximately as follows:

a) Levofloxacin, moxifloxacin and amoxicillin/clavulanate - more than 90%.

b) Amoxicillin in high doses, cefpodoxime proxetil, cefixime, cefuroxime axetil and trimethoprim-sulfamethoxazole - 80-90%.

c) Clindamycin, doxycycline, cefprozil, azithromycin, clarithromycin and erythromycin - 70-80% effective.

d) Cefaclor - 50-60%.

Surgery

A puncture (puncture) is done to remove thick purulent contents from the sinus and administer antibacterial drugs. After a puncture, drainage catheters are installed in the sinus, through which the sinus can be washed daily.

Sinusitis, which is an acute inflammation of the mucous membranes of the nasal cavities, is found to be 25-35% of patients with ear, nose and throat diseases. According to scientists, poorly treated viral infectious diseases and colds that have not completely healed cause sinusitis.

Imagine that there are many cavities inside our skull, like a cave, and they all open into the nasal cavity. In fact, these cavities should be filled with air, and due to a cold, the mucous membranes in the nasal cavity and other sinus cavities become inflamed, swollen, and begin to produce a lot of secretions. As a result, it becomes difficult to breathe through the nose.

Microbes that cause sinusitis are staphylococci, streptococci, enterococci, pneumococcus and fungi. Depending on the clinical course and manifestation of symptoms, sinusitis is divided into the following types:

a) Acute sinusitis - duration up to 4 weeks

b) Moderately acute sinusitis - duration from 4 to 12 weeks

c) Chronic sinusitis - lasts more than 12 weeks.

Sinus cavities in the nose are divided into several types depending on their location. Inflammation of the mucous membranes of the upper jaw cavity (sinusitis), inflammation of the mucous membrane of the sinus cavity (ethmoiditis), inflammation of the mucous membranes of the forehead cavity (frontitis), the main sinusitis) are different from each other. According to the clinical course, there are acute and chronic sinusitis, depending on the origin - rhinogenic, odontogenic, nosocomial and fungal sinusitis.

A decrease in the protective function of the mucous membrane of the nose and nasal cavities, as well as local and general immunity, makes it possible for the disease to occur. There are different ways of infection to cavities: through natural ways (rhinogenic way), hematogenous way - in acute diseases (diphtheria, scarlet fever, measles, etc.), inflammation of the upper jaw. the source of inflammation is diseased teeth located close to the lower wall of the cavity (odontogenic sinusitis).

Acute sinusitis is divided into the following types depending on the clinical course:

Exudative type: a) catarrhal, b) serous, c) purulent.

Derivative type: a) wall-hyperplastic, b) polyposis-cystosis.

Alterative type: a) cholesteatoma, b) caseous, c) necrotic, g) atrophic.

Mixed type: a) purulent-polyposis, b) serous, c) catarrhal.

During the clinical course of acute sinusitis, the internal anatomy of the nose may not be normal, the mucous membranes of the side cavities of the nose may be inflamed, and the aeration-drainage feature may be disturbed. Mucous membranes in the cavity are moistened and swollen. It secretes serous fluid and turns into pus, and swelling of the mucous membrane leads to closure of natural pathways. The inflammatory process in the mucous membrane can pass to the periosteal layer and in severe cases to the bone. In this case, periostitis develops, which causes the disease to become chronic.

Acute infectious diseases (ARVI, flu), colds, various injuries, decrease in the body's ability to fight general and local infectious diseases cause acute sinusitis.

When diagnosing acute sinusitis, the patient's complaints are taken into account. Severe pain may appear in the upper jaw and pain in various parts of the head on the side of the affected cavity. Breathing becomes difficult (unilateral or bilateral), purulent discharge comes from the nose, the sense of smell is disturbed. Body temperature rises and general weakness appears.

A patient can be diagnosed by palpation and examination using equipment. The presence of pain when palpating the patient's nose and upper jaw is taken into account. When examined through equipment, that is, rhinoscopes, swelling of the mucous membrane and the presence of purulent discharge are detected. Diagnosis is made by X-ray, computed tomography, endoscopy and puncture of the upper jaw cavity

with a needle, as well as based on general blood and urine analysis.

There are several types of treatment. Conducting anti-inflammatory therapeutic treatment, treating according to clinical symptoms, using vasoconstricting drops and ointments, regulating the amount and indicators of discharge, reducing swelling in the mucous membrane, restoring the erosion of the mucous membrane and preventing the disease from becoming chronic. recovery, as well as recovery of the immune system, upper jaw cavity washing and administration of drugs, physical treatment, prevention of eye and brain complications, treatment is carried out by using surgical methods.

Exercising the body by doing sports:

1. swimming in water (pool);
2. gymnastics, nasal breathing gymnastics;
3. Running, participating in tennis games.

Smooth cleaning of the upper respiratory tract, restore the function of the respiratory system and cardiovascular system to the body. Increasing the body's ability to fight against various acute infectious diseases (immunity) in general and locally. If these are followed regularly, acute sinusitis may not bother a person.

This is a disease characterized by an inflammatory process that affects one or more nasal cavities. There are acute and chronic types of the disease.

Available types of sinusitis:

- sinusitis - inflammation of the upper jaw cavity;
- -frontitis - inflammation of the frontal (forehead) cavities;
- sphenoiditis - inflammation of the sphenoid cavity;
- ethmoiditis - inflammation of the labyrinth of the gular bone;
- Pansinusitis - inflammation of all cavities.

Sinusitis is caused by:

1. acute respiratory diseases;
2. acute infectious diseases (Influenza);
3. hypothermia of the body (temperature drop);
4. complications of rhinitis, pharyngitis;
5. injury, nasal cavity operations;
6. inflammatory diseases of upper jaw teeth (Pulpitis, Periodontitis);
7. complications of allergic rhinitis;
8. Nasal polyps (small tumors on the nasal mucosa) - physiological features (curvature of the middle wall).

Sinusitis symptoms:

- constant flu;
- Difficulty breathing;

- purulent discharge from the nose;
- unpleasant smell from the nose or mouth;
- morning headache;
- pain in the bridge of the nose;
- puffiness under the eyes;
- Pain in the upper jaw;-fever.

Treatment of sinusitis includes:

a) antibiotics: Amoxicillin, Cefuroxime, Erythromycin, Azithromycin;

b) vasoconstrictor drugs: Epinephrine, Xylometazoline, Pinosol, Snup, Rint;

c) antihistamines: Claritin, Telfast, Tsetrin, Loratadine, Erius;

d) washing the nose, inhalation;

e) absorbent drying agents: Sinupret, Tsinnabsin, Sinuforte;

f) physiotherapy procedures (UVCH);

g) Surgical treatment (opening a cavity to remove pus, eliminating the curvature of the nasal wall).

Resection of the posterior end of the middle shell is indicated in some cases of sphenoiditis.

Also, in the treatment of sinusitis, an endoscopic technique is used - FESS-surgery. This minimizes tissue damage and shortens the patient's rehabilitation period.

Prevention of sinusitis should be aimed at treating the underlying disease (flu, acute rhinitis, measles, scarlet fever and other infectious diseases, dental damage), eliminating predisposing factors (deviation of the nasal septum, atresia and synechia in the nasal cavity, etc.).

List of used literatures:

1. Disease Ontology (English) - 2016.
2. Monarch Disease Ontology release 2018-06-29sonu - 2018-06-29 - 2018.
3. A more accurate correspondence of this variant of the name to the norm of the Latin language was noted: V. S. Lyanda. On the issue of the nomenclature of otolaryngological diseases // Bulletin of Otolaryngology, 1955, No. 3, p. 65.
4. Slavin RG, Spector SL, Bernstein IL, Kaliner MA, Kennedy DW, Virant FS. The diagnosis and management of sinusitis: a practice parameter update. J Allergy Clinic Immunol. Dec 2005; 116(6 Suppl):S13-47.
5. Guide to otorhinolaryngology, ed. I. B. Soldatova, M.: Medicine 1997, S. 256-272
6. Palchun V. T., Vorobyov Yu. I., Elkin N. I., Kitaev V. V., Maksimova O. M., Paches A. I. Paranasal sinuses // Big Medical Encyclopedia: in 30 volumes. / Ch. ed. B.V. Petrovsky. - 3rd ed. - M.: Soviet Encyclopedia, 1983. - T. 21: Prednisolone - Solubility. — 560 p.: ill.
7. Soldatov I. B., Naumov P. V. Sinusitis // Big medical encyclopedia: in 30 volumes / ch. ed. B.V. Petrovsky. - 3rd ed. - M.: Soviet Encyclopedia, 1977. - T. 4: Valin - Gambia. — 576 p. : ill.
8. Likhachev A. G. Sphenoiditis // Big Medical Encyclopedia: in 30 volumes / ch. ed. B.V. Petrovsky. - 3rd ed. - M.: Soviet Encyclopedia, 1985. - T. 24: Vascular suture - Teniosis. — 544 p. : ill.

9. Likhachev A. G. Frontitis // Big Medical Encyclopedia: in 30 volumes / ch. ed. B.V. Petrovsky. - 3rd ed. - M.: Soviet encyclopedia, 1985. - T. 26: Carbonic waters. — 560 p.: ill.
10. Likhachev A. G. Etmoiditis // Big Medical Encyclopedia: in 30 volumes / ch. ed. B.V. Petrovsky. - 3rd ed. - M.: Soviet Encyclopedia, 1986. - T. 28: Economo - Foot and mouth disease. — 544 p. : ill.
11. Textbook for medical universities Otorhinolaryngology, ed. D. I. Zabolotny, K.: Health 1999, p.228
12. E.G. Shakhov. Sinusitis: clinic, diagnostics, drug treatment // Vestnik VolGMU. - S. 78-85.
13. Sinusitis // 1. Small medical encyclopedia. — M.: Medical Encyclopedia. 1991-96 2. First aid. — M.: Great Russian Encyclopedia. 1994 3. Encyclopedic dictionary of medical terms. — M.: Soviet Encyclopedia. - 1982-1984 in the Small Medical Encyclopedia.
14. Vishnyakov V.V. Otorhinolaryngology. - GEOTAR-Media, 2014. - 328 p.