Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

PHARYNGOMYCOSIS IN CHILDREN

Sodiqova M. B.
Ismatova K. A.
Tashkent Medical University

Abstract

Chronic pharyngitis is one of the most common pathologies of the pharynx and can occur both as an independent disease and be a manifestation of pathology of other organs and systems of the body. To date, many methods of treating this condition have been proposed, but, in some cases, the effectiveness of the therapy remains low. Among the reasons for the lack of effect may be acidosis of the mucous membrane of the pharynx associated with gastroesophageal reflux disease (GERD), which causes changes that are difficult to treat with conventional therapy. According to various authors, the prevalence of GERD reaches 60%. At the same time, the addition of a fungal infection makes the patient's treatment even more difficult. It has been established that in 29 - 44.6% of patients, chronic pharyngitis of various etiologies is combined with a fungal lesion of the pharynx and the number of such patients does not decrease. In addition, it has been proven that atrophic changes in the mucous membrane of the pharynx contribute to the adhesion and colonization of fungal biota on it. Along with this, there is no data on the relationship between the level of acid-base balance (pH) of the mucous membrane of the pharynx and the presence of fungal flora on it in chronic pharyngitis. In this regard, the search for new treatment technologies that would not only restore the pH level of the pharynx and affect the regeneration processes of the mucous membrane, but also have a fungicidal effect on Candida albicans , is relevant. One of such technologies is a highly effective method of combined action on inflammation foci of low-frequency ultrasound energy and gas mixtures, including ozone and nitrogen oxide. The above physical and physicochemical factors, being pathogenetically substantiated and quite effective methods of treating ENT diseases (chronic tonsillitis, adenoiditis , chronic otitis), can also be used in chronic atrophic pharyngitis associated with pharyngomycosis in patients with GERD, due to the possibility

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

of providing them with anti-inflammatory, fungicidal , antiacidosis , oxygenating and other effects that promote reparative regeneration.

The aim of the study

To improve the efficiency of diagnostics and treatment of chronic atrophic pharyngitis associated with pharyngomycosis against the background of acidosis of the mucous membrane of the oropharynx in patients with gastroesophageal reflux disease based on the development of a treatment and diagnostic algorithm using a complex ozone -ultrasound method in combination with antifungal and antireflux therapy.

Objectives and methods of the study

To study the microbial landscape of the oropharyngeal mucosa in patients with pharyngeal manifestations of gastroesophageal reflux disease. To identify the clinical features of pharyngeal manifestations in patients suffering from gastroesophageal reflux disease. To justify the need to determine and conduct an analysis of the pH levels of the mucous membrane of the pharynx in chronic atrophic pharyngitis, associated and not associated with pharyngomycosis in patients suffering from gastroesophageal reflux disease.

Results of the study

Chronic inflammation of the mucous membrane of the pharynx develops as a result of acute inflammation with inadequate treatment and uncorrected etiological factors [8], among which are acid-dependent diseases of the gastrointestinal tract [7]. The cause of exacerbation and chronicity of the inflammatory process in the pharynx is most often the effect of microorganisms [4], the representatives of which are: Streptococcus a- haemolyticus , ß-haemolyticus , y- haemolyticus ; Staphylococcus aureus; CNS Staphylococcus ; Neisseria spp .; Haemophilus spp .; Corynebacterium spp .; Candida fungi ; filamentous fungi (up to continuous growth) [1, 4]. In 90% of cases, the bacterial flora of the posterior pharyngeal wall is represented by associations of 23 types of microbes [4, 5].

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

It was found that among patients with the atrophic form of chronic pharyngitis, patients with weakly acidic refluxes predominated (54.4%), and the duration of esophageal acidification was shorter in comparison with groups of patients with other pharyngitis; in the group with hypertrophic and catarrhal pharyngitis, the overwhelming majority had acidic VGER - 69.4% and 57.6%, respectively. In the group with the hypertrophic form of chronic pharyngitis, not only was acidic VGER significantly more common, but also the duration of esophageal acidification was longer. Chronic atrophic (subatrophic) pharyngitis, in essence, is a manifestation of dysfunction of the mucous membrane of the pharynx, due to thinning of the epithelial and submucosal layers, characterized by dryness, poor blood supply, decreased volume and thickening of the produced mucus [5]. This condition, in turn, entails a violation of tissue trophism, weakening of local protective reactions, changes in lymph circulation, increased permeability of tissues and vessels, easier penetration, adhesion and colonization of fungi, i.e. is one of the causes of fungal infection of the pharynx. When examining patients with a long and persistent history of the disease, the fungal nature of the inflammation is detected in 44.7% of patients.

At the same time, superficial forms of candidiasis with damage to the mucous membranes are quite common (24-60%). Among the factors predisposing to the development of mycosis, an important role is given to nutritional and metabolic disorders, most often carbohydrate. The greatest importance is given to the hyperglycemic state in diabetes mellitus. According to a number of authors, diabetes contributes to the activation of Candida infection .

By now it has been established that pathogenicity factors are few in number, but still quite diverse. The main ones include its adhesive activity, dimorphism, proteolytic and lipolytic enzymes, immunosuppressive activity, the presence of cross-reacting antigens in the fungus with some human tissues, as well as high phenotypic variability, which ensures the vital activity of the fungus in various habitats. Oxygen plays a significant role in the respiration of pathogenic fungi, since most of them are aerobes. A certain concentration of carbon dioxide is also necessary for the effective growth of fungi. One of the necessary conditions for the existence of fungi is the presence of water, but its amount should be moderate,

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

since excess water has an inhibitory effect on the development of fungi. Proteins and mineral salts are nutrients for pathogenic fungi. Acute pseudomembranous form (the "classical" form, thrush), in which any part of the oral cavity and pharynx can be affected in the form of pinpoint plaques, white grains, which later form films resembling curdled milk, having a curdled appearance. The plaque is easily removed by scraping with a spatula, leaving a bright red base, sometimes with a bleeding surface. The lesions are usually painless.

The chronic pseudomembranous form is characterized by the involvement of all parts of the oral cavity, difficult to separate films with an erosive, bleeding base, has a long, persistent course, resistance to therapy. It occurs in patients with HIV infection, AIDS and other immunodeficiency states. Acute atrophic form (acute erythematous , sometimes desquamative), in which the tongue is most often affected, or any part of the oral cavity. The lesions are represented by erythema spots with a smooth, varnished surface. Accompanied by severe pain, burning and dryness in the oral cavity. The mucous membrane becomes very sensitive to tactile, chemical and temperature irritants, which makes the intake of coarse food, cold and hot liquids painful. It may occur after acute pseudomembranous form or independently, be a complication of antibiotic therapy, be a consequence of the use of local (including inhalation) or oral systemic corticosteroids.

Chronic atrophic form. Characteristic is the presence of chronic erythema and edema of the mucous membrane adjacent to the prosthesis. It is characterized by scanty symptoms, often combined with candida angular cheilitis . More common in older people who wear dentures.

Chronic hyperplastic form (hypertrophic, plaque , candidal leukoplakia). On the mucous membrane of the cheeks, less often on the tongue, white spots and plaques of varying sizes appear, around which there is a rim of hyperemia, which are difficult to separate from the underlying epithelium. Subjective sensations are usually absent. More often observed in smokers, sometimes in people using dentures. In 15-20% of cases, it has a tendency to malignancy. Particularly dangerous are lesions where elements of erythema and leukoplakia are combined. The erosive-ulcerative form is very rare, with diabetic ketoacidosis , chronic candidiasis against the background of autoimmune polyendocrinopathy .

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

Candidiasis of the corners of the mouth (angular stomatitis , angular cheilitis, candidal angular cheilitis (angular cheilitis) may accompany any of the listed forms of oral candidiasis, or develop independently. Usually both folds of the corners of the mouth are affected, in the form of erythema and cracks, you can notice an easily removable whitish coating (a layer of macerated epithelium). Lesions can be painful when opening the mouth and moving the lips. The disease tends to have a chronic recurrent or persistent course: the crack deepens, its edges thicken, infiltration develops around the crack; swelling, hyperemia, infiltration, peeling, thin yellowish crusts are noted on the skin of the corners of the mouth due to secondary infection with bacteria. It is important that mycotic lesions of the pharynx can be acute, in which case, as a rule, it is accompanied by widespread lesions of the mucous membrane of the oral cavity and pharynx, and chronic, in which the lesion is often limited to the palatine tonsils (tonsillomycosis) or the back wall of the pharynx (pharyngomycosis); a distinction is made between recurrent and persistent forms of chronic pharyngomycosis .

Clinical, anatomical and physiological relationships between the pharynx and the upper gastrointestinal tract The pharynx, being part of the respiratory tube, is the initial part of the digestive tract, located between the oral cavity and the esophagus, and is divided into the nasopharynx - oropharynx - and laryngopharynx. The oropharynx communicates with the esophagus via the laryngopharynx, into which food is directed and subsequently moves to the stomach. With gastroesophageal reflux, according to the same principle, but in the opposite direction, the contents of the stomach can enter the pharynx, which under certain conditions causes the development of a pathological process in the surrounding tissues.

Gastroesophageal reflux (GER) is an involuntary reflux of gastric or gastrointestinal contents into the esophagus. Physiological GER does not cause esophagitis, occurs in healthy people of any age, more often after meals, while there are no clinical symptoms, the frequency of its episodes is low (no more than 20-30 episodes per day), the duration is insignificant (up to 20 seconds). Pathological GER leads to damage to the mucous membrane of the esophagus

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

with the development of reflux esophagitis, occurs at any time of the day, is characterized by a high frequency (more than 50 episodes per day, the total duration of which exceeds 1 hour per day), leads to the formation of esophageal and extraesophageal manifestations.

According to the literature, the number of patients with GERD is increasing. If in the 90s of the last century, GERD symptoms (heartburn, belching) occurred in 20-40%, then at the beginning of the 21st century - in 40-60% of the world's population. Gastroesophageal Reflux disease (GERD) is characterized by esophageal and extraesophageal manifestations and various morphological changes in the esophageal mucosa caused by retrograde reflux of gastric or gastrointestinal contents into it. Currently, GERD is considered a disease associated with impaired motility of the esophagus and stomach. The leading place in the pathogenesis belongs to the weakening of the function of the antireflux barrier of the lower esophageal sphincter, due to a decrease in its tone or an increase in episodes of its spontaneous relaxation. Other factors in the development of the disease are impaired chemical and volumetric clearance of the esophagus, i.e. the ability of its "self-cleaning" from the acidic contents of the stomach; as well as the damaging effect of the gastric refluxate itself (hydrochloric acid, pepsin, bile acids) on the esophageal mucosa .

The development of GERD is facilitated by obesity, stress, increased intra-abdominal pressure due to pregnancy or prolonged forced body position, dietary habits (consumption of fatty foods, alcohol, chocolate, drinks containing caffeine, etc.), and the use of drugs that reduce smooth muscle tone (nitrates, calcium channel blockers, beta-adrenergic agents, theophylline).

According to some data, the prevalence of GERD increases with age ($r = 0.6$), while the structure of the main symptoms changes: there is a decrease in the proportion of patients with heartburn ($r = -0.3$) and an increase with regurgitation ($r = 0.7$), and the prevalence among men (12.5%) and women (13.9%) does not differ significantly, however, in women, GERD increases with age, reaching a maximum in old age (24%). According to foreign researchers, the most significant risk factor for the development of erosive GERD is male gender. The risk of developing GERD increases in women before menopause if they are

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

overweight (possibly due to high levels of estrogen hormones). Also, smoking and alcohol abuse have become significant risk factors for the development of GERD in women, which is associated with an increase in the number of women smoking and abusing alcohol in the 20th century. The risk of developing or worsening GERD in women is high during pregnancy. A distinction is made between non-erosive reflux disease (60-65% of cases) and reflux esophagitis (30-35%), as well as esophageal and extraesophageal symptoms of GERD. Esophageal symptoms include heartburn, belching, pain in the epigastric region, dysphagia, odynophagia . The main symptom of the disease is heartburn (a burning sensation spreading from the stomach or lower chest towards the neck) and/or reflux of stomach contents into the esophagus, which disrupts the daily life of patients, work, social activity and sleep. The severity of clinical symptoms does not depend on the severity of changes in the esophageal mucosa and does not allow differentiation between nonerosive reflux disease from reflux esophagitis. The non-erosive form of GERD is most often accompanied by extraesophageal manifestations of the disease.

Conclusions

For the first time, based on the use of a colorimetric method for diagnosing the pH level of the secretion of the mucous membrane of the pharynx, the fact of the dependence of the presence of pathogenic fungal flora on acidosis in patients with chronic atrophic pharyngitis in gastroesophageal reflux disease. The use of a colorimetric method for diagnosing the pH level of the mucous membrane of the pharynx in patients with chronic atrophic pharyngitis in patients with gastroesophageal reflux disease.

References

1. Andamova , O.V. Ozone therapy and low-frequency ultrasound in the treatment of chronic tonsillitis / O.V. Andamova , M.A. Rymsha, V.V. Pedder // Current issues in otolaryngology. - 2018. - P. 99-102.
2. Bakanova , D.Ya. Study of microflora and its sensitivity to antibiotics in patients with chronic pharyngitis treated with cryotherapy / D.Ya. Bakanova ,

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 05, August, 2025
Website: usajournals.org

M.G. Grig, M.M. Dykhno // Antibiotics. - 2016. - Vol. 21. - No. 11. - P. 988-992. Vasiliev, Yu.V. Proton pump inhibitors / Yu.V. Vasiliev // Attending physician. - 2017. - No. 1. - P. 3-7.

3. Vertakova , O.V. Features of the phagocytic activity of peripheral blood neutrophils in combined methods of treating oropharyngeal candidiasis / O.V. Vertakova , O.V. Andamova , A.B. Kiselev, E.N. Samsonova // III interregional scientific and practical conference of otolaryngologists with international participation "Educational and therapeutic aspects of otolaryngology". - Novosibirsk, 2021. - P. 32.

4. Grigorieva, Yu.V. The phenomenon of "night acid breakthrough" in patients with acid-dependent pathology / Yu.V. Grigorieva, I.Yu. Kolesnikova // Upper Volga Medical Journal. - 2023. - V.11. - No. 3. - P. 23.

5. Gurov, A.V. The effect of bioparox on the pharyngeal microbiocenosis in patients with exacerbation of chronic pharyngitis / A.V. Gurov, L.A. Luchikhin , T.S. Polyakova // Bulletin of Otolaryngology. - 2017. - No. 3. - P. 56-58.

6 . Daynyak , L.B. Treatment of exudative sinusitis using low-frequency ultrasound / L.B. Daynyak , T.P. Sukhieva , Yu.M. Nikitina // Bulletin of Otorhinolaryngology. - 2019. - No. 3. - P. 27-53.

7. Dekker A.F. Low-frequency ultrasound in the treatment and prevention of purulent infection: author's abstract . dis . candidate of medical sciences: 14.00.27 / Dekker Artem Fedorovich. - Omsk, 2013. - 21 p.

8. Zhernakova , N.I. Modern approaches to conservative therapy of peptic ulcer disease / N.I. Zhernakova , D.S. Medvedev, A.S. Pozharskis // Scientific Bulletin of Belgorod State University. Series: Medicine. Pharmacy. - 2019. - No. 11. - P. 23-32.

9. Zakharova, G.P. Modern methods for assessing mucociliary transport disorders in the diagnosis of chronic rhinosinusitis / G.P. Zakharova, V.V. Shabalin, A.A. Lantsov // Bulletin of Otolaryngology. - 2019. - No. 4. - P.53-55.