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CLINICAL ASPECTS OF THE RELATIONSHIP BETWEEN GASTROESOPHAGEAL REFLUX DISEASE AND DENTAL DISORDERS

Axmedzyanova Alina Ruslanovna
Student 202A of the Faculty of Dentistry, EMU University
alinaahmedzanova 069@ gmail . com

Supervisor: Petrova Yurita Yurevna
EMU University, Senior Lecturer,
Department of Medical and Biological Sciences.
info @ emuni . uz
yurita 86@ bk . ru

Abstract

One of the pressing challenges of medical rehabilitation today is not only the treatment of the primary pathology, but also the elimination of the resulting disorders at all integrative levels of the body's functioning, restoration of functional capacity for living conditions familiar before the onset of the disease, achievement of social and professional adaptation, and improvement of quality of life. Finding solutions to this problem is relevant for patients with gastroesophageal reflux disease. Reflux disease, which is recognized as the leading disease of the digestive system due to its frequency, potential severe clinical manifestations, and consequences. The clinical picture of GERD is multifaceted and can manifest and be complicated by extraesophageal manifestations. Numerous studies indicate the widespread prevalence of bronchopulmonary pathology in patients with GERD. According to the literature, 34-60% of patients with GERD have chronic obstructive pulmonary disease. Two mechanisms are recognized as the main causes of chronic obstructive pulmonary disease in GERD: microaspiration of gastric contents into the bronchi and reflex etiology of pulmonary manifestations through the vago-vagal Reflex. Extraesophageal manifestations of GERD are often not associated by patients and physicians with gastrointestinal pathology, which can lead to inappropriate management strategies. Medication plays a key role in GERD treatment. The highest cure rates and maintenance of remission are achieved with combination therapy with proton pump inhibitors and prokinetic agents . Long-term use of these agents increases the risk of various complications, which are often unacceptable to the patient. Therefore, non-pharmacological approaches are increasingly becoming important in the comprehensive treatment of GERD.

Gastroesophageal Reflux disease (GERD) is one of the most common gastrointestinal disorders, characterized by the regular reflux of acidic gastric contents into the esophagus and, in some cases, the oral cavity. This condition significantly impacts not only the esophageal mucosa but also the oral tissues, leading to the development of various dental disorders. The

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clinical significance of this problem lies in the fact that the dental manifestations of GERD are often underestimated or mistakenly interpreted as independent oral diseases. However, changes such as enamel erosion, increased tooth sensitivity (hyperesthesia), carious lesions, xerostomia, inflammatory changes in the mucosa, and periodontal disease can serve as early diagnostic signs of reflux disease. The pathogenic basis for dental disorders associated with GERD is the prolonged exposure of the hard and soft tissues of the oral cavity to hydrochloric acid and pepsin. This leads to enamel demineralization, impaired protective properties of saliva, altered microbiome, and decreased local immunity. As a result, the risk of inflammatory and destructive processes increases. Particular attention is paid to an interdisciplinary approach to the diagnosis and treatment of patients with GERD. Collaboration between a gastroenterologist and a dentist enables timely detection of the pathology, differential diagnosis, and the prescription of comprehensive therapy aimed at both eliminating gastroesophageal reflux and restoring dental health.

Thus, the study of the clinical aspects of the relationship between GERD and dental disorders is important for practical medicine, as it contributes to the early detection of the disease, reducing the risk of complications and increasing the effectiveness of patient treatment.

Keywords. Gastroesophageal reflux disease, GERD, enamel erosion, caries, dental disorders, acid reflux, dental hypersensitivity, oral mucosa, interdisciplinary approach.

Introduction

The aim of the study was to study the clinical aspects of the relationship between gastroesophageal reflux disease and dental disorders, as well as to determine the features of their diagnosis and prevention.

Research objectives: To study the pathogenetic mechanisms of GERD's effects on oral tissues. To characterize the main dental manifestations in patients with GERD. To assess the frequency and severity of dental and mucosal damage in GERD. To analyze diagnostic methods for GERD-related dental disorders. To develop recommendations for prevention and comprehensive treatment of patients.

Research methods. To study the clinical aspects of the relationship between gastroesophageal A combination of clinical, instrumental, and analytical methods was used to evaluate GERD and dental disorders. The study included patients with a confirmed diagnosis of GERD of varying severity. GERD was diagnosed based on complaints, medical history, and instrumental methods, including fibrogastroduodenoscopy (FGDS) and 24-hour pH monitoring.

The dental examination included: a visual examination of the oral cavity; an assessment of the condition of hard dental tissues; identification of enamel erosion and carious lesions; determination of the level of oral hygiene; an assessment of the condition of the mucous membrane and periodontal tissues; and testing of tooth sensitivity.

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Additionally, saliva was analyzed (pH level , buffering capacity, salivary flow rate), and patients were surveyed to identify complaints (heartburn, acid regurgitation, dry mouth, tooth sensitivity). Statistical analysis of the data was performed using variation statistics to determine the significance of differences between groups.

Results of the study. The study revealed a significant relationship between the presence of gastroesophageal reflux disease and the development of dental disorders. Most patients with GERD experienced changes in the dental hard tissues, particularly enamel erosion of varying degrees, primarily on the buccal and palatal surfaces of the teeth. The incidence of erosive lesions was significantly higher in patients with long-standing disease. An increase in the prevalence of dental hyperesthesia, manifested by increased sensitivity to temperature and chemical irritants, was also noted. Some patients developed dental caries, which may be related to changes in the composition of saliva and a disruption of its protective properties. Signs of mucosal inflammation, dryness (xerostomia), and periodontal changes were observed in the soft tissues of the oral cavity. Saliva analysis revealed a decrease in pH and buffering capacity, which contributes to enamel demineralization and the development of pathological processes. It has been established that the severity of dental problems correlates with the frequency and duration of reflux episodes. Patients with severe GERD had more severe oral lesions.

Comprehensive studies revealed characteristic clinical signs of this combined pathology: endoscopic findings of the esophageal mucosa consistent with acid-dependent disease, radiographic evidence of pulmonary emphysema and pneumosclerosis, decreased lung volumes and the development of obstructive pulmonary ventilation disorders, elevated nonspecific inflammatory activity indicators (in more than 30% of patients), and decreased overall neurohumoral effects on heart rate. This indicated the presence of a sluggish inflammatory process in the esophagus and bronchopulmonary system, structural and functional abnormalities in the bronchopulmonary system, impaired autonomic regulation, weakened adaptive capacity, and decreased exercise tolerance. A course of low-frequency magnetic therapy was found to improve the clinical signs of GERD (50%), normalize the physical properties and microscopic characteristics of sputum (36%), and correct the endoscopic image of the esophagus (47.1%) and obstructive changes. The use of naphthalan applications in combination with low-frequency magnetic therapy enhances the anti-inflammatory effect of the rehabilitation course, contributing to improved bronchial patency and autonomic regulation. For the first time, it has been proven that the use of low-frequency magnetic therapy and naphthalan in the medical rehabilitation of patients with GERD with concomitant bronchopulmonary pathology while receiving standard pharmacotherapy is significantly more effective than the standard drug course ($p < 0.05$ for %) in terms of its impact on clinical symptoms, physical and microscopic characteristics of sputum, functional characteristics of the bronchopulmonary system, and parameters of the activity of regulatory systems.

The inclusion of a low-frequency alternating magnetic field and naphthalan in the medical rehabilitation of patients with GERD and associated bronchopulmonary symptoms contributes

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to the improvement of the clinical status and functional parameters of the digestive and bronchopulmonary systems. The therapeutic effectiveness of the developed technologies is based on the reduction of the inflammatory response, correction of the functional state of the esophagus and bronchopulmonary system, and restoration of autonomic regulation. The effectiveness of combined treatment using low-frequency alternating magnetic fields and naphthalan is higher compared to a method using exposure alone.

In the water. Gastroesophageal Reflux disease (GERD) has a significant impact on oral health and is a significant risk factor for dental problems. The main dental manifestations of GERD include enamel erosion, tooth hypersensitivity, caries, xerostomia, and inflammatory diseases of the mucous membrane and periodontal tissues. The pathogenetic basis of these changes is the effect of hydrochloric acid and pepsin, leading to demineralization of hard dental tissues and disruption of the protective properties of saliva. The severity of dental disorders directly depends on the duration and severity of GERD, as well as the frequency of reflux episodes. Dental changes may serve as early diagnostic signs of GERD, highlighting the importance of their timely detection. Effective patient management requires a multidisciplinary approach involving a gastroenterologist and a dentist. Preventive measures and comprehensive treatment can reduce the risk of complications and improve patients' quality of life.

References

1. Bartlett D., Smith BGN The dental effects of gastroesophageal reflux disease. Journal of Oral Rehabilitation, 2018.
2. Moazzez R., Anggiansah A. Dental erosion associated with gastroesophageal reflux disease. British Dental Journal, 2017.
3 . Vakil N., van Zanten S.V., Kahrilas P. et al. The Montreal definition and classification of GERD. The American Journal of Gastroenterology, 2006.
4. Zero DT Etiology of dental erosion - extrinsic factors. European Journal of Oral Sciences, 2016.
5. L ussi A., Jaeggi T. Dental erosion: diagnosis, risk factors and prevention. Clinical Oral Investigations, 2019.
6. Kahrilas PJ Gastroesophageal reflux disease. New England Journal of Medicine, 2018.

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