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Study Of The Analysis Of Stomatological Agents Used In The Oral Cavity

Usmonova Malikakhon Komiljon kizi
Alfraganus university, Senior lecturer at the Department of Pharmaceutical and chemistry (PhD), Tashkent, Uzbekistan

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Abstract: This article examines the pharmaceutical analysis of dental drugs used in the oral cavity, their composition, pharmacological properties, methods of application, and effectiveness. The study analyzed medicinal preparations with antiseptic, anti-inflammatory, analgesic, remineralizing, and regenerative effects. In addition, the advantages, disadvantages, and bioavailability of polymer-based, herbal, and antibiotic-containing dental products were evaluated. The article highlights the necessity of developing pharmaceutical analysis methods and quality standards for drugs used in the treatment of oral diseases.

Keywords: Dental preparations, oral cavity, antiseptics, polymer base, analysis, bioavailability, analgesics.

Introduction: One of the urgent issues of modern dentistry is the development of advanced and effective medicinal products designed for the treatment of various pathologies of the oral cavity.

Along with a number of traditional dosage forms currently in use (solutions, ointments, pastes, gels, sprays, etc.), modern dosage forms based on polymers are also being applied.At present, dental diseases such as caries, gingivitis, periodontitis, stomatitis, periodontosis, and other inflammatory processes affect a large portion of the population. According to data from the World Health Organization (WHO), the prevalence of oral cavity diseases among the world's population reaches 80–90%. Local dental preparations play a significant role in the prevention and treatment of these diseases [3,4,5]

In modern dentistry, improving the effectiveness of medicinal products depends on their pharmaceutical form, bioactivity, solubility, and duration of action. Therefore, before the development of each dental preparation, its pharmaceutical analysis, chemical stability, quality indicators, and biological efficacy must be thoroughly studied [1,3,7,9,10].

METHODS

The research objects consisted of gels, ointments, and polymer films used in dental practice.To identify and recommend the most promising types of dental preparations. Each preparation was planned to be studied in detail. Content analysis was carried out based on indicators such as the width, depth, and renewal index of the assortment [5,6,10,11]. For the content analysis, information on the names, dosage forms, manufacturing companies, and countries of origin of dental medicinal products registered and approved for medical use in the Republic of Uzbekistan was taken as the basis.

RESULT

Traditional medicine offers a number of effective remedies. The first and most important is rinsing the mouth. The best healing, anti-inflammatory, and soothing properties are found in simple herbs such as mint, plantain, and calendula. It is beneficial to add carrot juice, table salt, and hydrogen peroxide to these rinses. It is recommended to rinse the mouth every two hours and to prepare and drink various herbal teas throughout the day. If the ulcers are large and painful, the following infusion should be prepared: take linden, calendula, linden flowers, and rose petals, and mix them as thoroughly as possible [3,9,11,13].

In particular, when the disease is accompanied by mouth ulcers, herbal remedies made from coltsfoot, birch leaves, and licorice root are very effective. All ingredients should be crushed, mixed, and boiled. The

oral cavity should be rinsed with this infusion as often as possible, at least 7–8 times a day.

Cooling and slightly drying medicines, which do not irritate the teeth with acidity or sharpness (as grape or lemon juice might), include the following: vinegar syrup, camphor, sandalwood, rose, rose seed, pomegranate flower, gum of the baqam tree, fruit of the tamarisk tree, vinegar, amber, pearl, coral, barley flour, root of the mulberry tree, leaf of the tamarisk tree, and root of coltsfoot.

Among the warm and nearly warm medicines, some possess inherent warmth in their substance, while others acquire it during preparation.

Diseases of the oral periodontium and the treatment of the oral cavity remain among the most pressing issues in the field of dentistry.

Depending on the course of the disease, appropriate treatment is applied: it may include professional oral cleaning or surgical intervention. In cases of severe or chronic gingivitis, systemic use of antibiotics such as penicillin, tetracycline, doxycycline, metronidazole, ciprofloxacin, or clindamycin may be prescribed. To relieve gum pain, paracetamol or ibuprofen is recommended [1,3,9,11,13,17].

There are many types of dental treatments. The cause of toothache may be an imbalance of temperament — it can occur due to a “cold” or “hot” temperament, or, as in the elderly, from a “dry” temperament caused by nutritional deficiency; however, it does not occur due to a “moist” temperament, which has been well established. Sometimes, the cause may be a “corrupted” temperament resulting from impure or inflammatory substances. These substances may cause swelling in the tooth, lead to cavities, or even result in worm infestation [3,9,11,13,16]. Even if the whole body is full of such matter, the substance that affects the teeth usually comes either from the stomach, the head, or both, as these are the main routes through which materials reach the teeth.

Some dental medicines serve to maintain the health of the teeth, while others are intended to treat them. Because the substance of the teeth is naturally dry, the medicines that maintain or restore their health are drying agents. Medicines with warming or cooling effects are needed when the natural temperament of the teeth changes significantly due to diseases of either hot or cold origin. The most suitable medicines for the teeth are moderately drying agents that possess a balanced nature and help preserve dental health. However, not every drying medicine is suitable for use on the teeth — the unsuitability arises not because it cannot be applied, but because its use may cause adverse effects.

Thus, tooth-drying medicines may be classified as cold-dry or hot-dry. The best dental medicines are those that, in addition to drying and absorbing excess moisture, polish the teeth, moderately dissolve harmful substances accumulated on them, and prevent the attraction of unwanted matter toward the teeth.

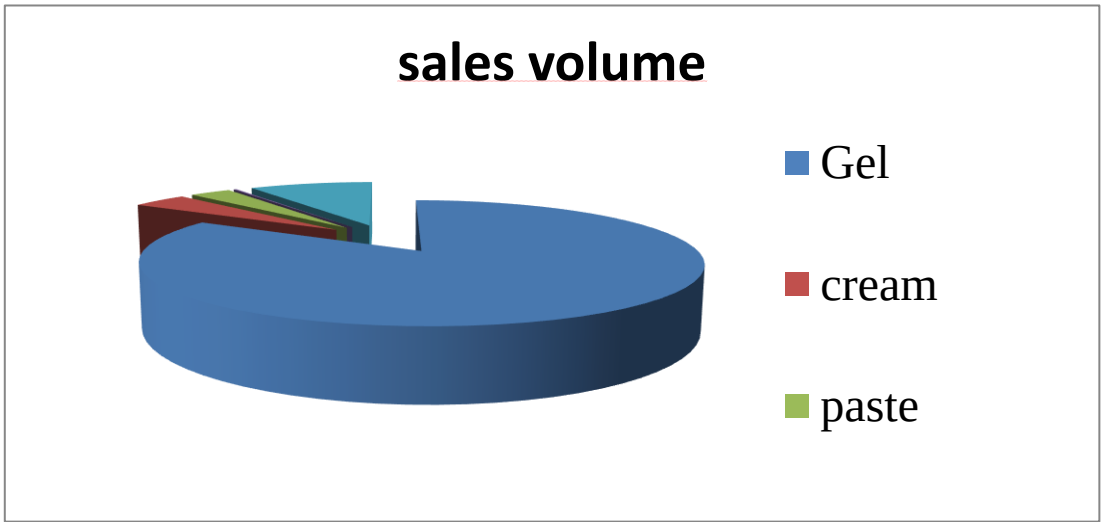

Figure 1. Market share of oral health drugs in Uzbekistan.

In several fields of medicine — including dermatology, ophthalmology, dentistry, otorhinolaryngology, gynecology, cardiology, and others — there are broad opportunities to enhance the effectiveness of therapeutic treatments. The wide range of auxiliary substances (polymers) used, the simplicity of their preparation methods, and the ability to incorporate various active ingredients into polymer films have created a foundation for the development of new directions in medicine [3,9,11,13,16,17].

Since polymer films can prolong the duration of drug action, reduce the amount of medication required during a treatment course, and provide convenience in application, it is recommended to use drugs belonging

to various pharmacological groups (antibacterial, anti-inflammatory, cytostatic, hormonal, cardiovascular, etc.) in the form of polymer films. Based on this, expanding the range (nomenclature) of drugs incorporated into polymer films is considered one of the important current tasks [3,9,11,13].

CONCLUSION

Studying the anatomy of the organs of the oral cavity through the methods of Eastern medicine, as well as providing students with an understanding of oral diseases, their causes, clinical manifestations, types, diagnostic methods, treatment measures, and recommended medicinal plants, is our primary objective.

In various fields of medicine — including dermatology, ophthalmology, dentistry, otorhinolaryngology, gynecology, cardiology, and others — there are opportunities to increase the effectiveness of therapeutic treatments. The wide range of auxiliary substances (polymers) used, the simplicity of their production methods, and the possibility of incorporating different active substances into the composition of polymer films have laid the foundation for the development of a new direction in medicine.

Since polymer films can prolong the duration of drug action, reduce the amount of medication required during a treatment course, and offer ease of use, it is recommended to apply drugs from various pharmacological groups (antibacterial, anti-inflammatory, cytostatic, hormonal, cardiovascular, etc.) in the form of polymer films. Based on this, expanding the range (nomenclature) of drugs incorporated into polymer films is considered one of the most important current tasks.

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