МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

М А Т Е Р І А Л И

106-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького колективу
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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The main group consisted of 72 animals, which were created IAH by inserting into the abdominal cavity a container (condom) with a certain amount of furacillin. Depending on the level of intra-abdominal pressure (IAP), the animals of the main group were divided into two subgroups. The IAP level of the animal of the first subgroup was 20 smH2O (14.7 mmHg), and the second - 40 smH2O (29.4 mmHg).

The comparison group consisted of 48 animals who had an empty condom inserted into the abdominal cavity after laparotomy.

The mechanical strength of the postoperative scar of the laparotomy wound was determined by the method introduced by GV Petrovych (2010) on the 1st, 3rd, and 5th days after the creation of IAH, by measuring the level of IAH at the time of rupture of the postoperative scar of the laparotomy wound.

Results. The results of the study indicate that the created IAH negatively affects the strength of the postoperative scar. Thus, a steady increase in IAP to 20 smH2O leads to a decrease in the mechanical strength of the postoperative scar, but the latter on the 7th day of observation returns to normal because the difference with the comparison group at this time is unlikely. It should be noted that the strength of the postoperative scar depends on the level of IAP, as the growth of the latter to 40 smH2O leads to significantly lower values against other experimental groups, except for the first subgroup of the main group on the 1st day of observation, where this difference is unlikely. It should be added that the dynamics of growth of mechanical strength of the postoperative scar, throughout the study period, is unlikely at increased IAP to 40 smH2O.

Conclusions. Therefore, the created IAH leads to a decrease in the mechanical strength of the postoperative scar of the laparotomy wound. The degree of a negative impact of IAH on the strength of the postoperative scar is inversely proportional to the level of IAH.

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ADVANCEMENTS AND CHALLENGES IN ORAL CANCER SCREENING
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Introduction. Oral cancer, particularly oral squamous cell carcinoma (OSCC), remains a persistent and substantial global health burden. This cancer type ranks among the most common malignancies, with high incidence rates observed particularly in South and Southeast Asia and several Southern European countries. Various risk factors, including tobacco use, alcohol consumption, and exposure to certain human papillomavirus strains, contribute significantly to the prevalence of OSCC. The urgency for effective early detection and screening is underscored by the fact that oral cancer often presents in advanced stages, leading to lower survival rates and poorer prognoses. Consequently, implementing effective screening strategies is essential to improve early detection, enhance treatment success, and ultimately increase patient survival rates.

The aim of the study. Recent technological advancements are providing promising alternatives that may supplement or replace conventional screening methods. Liquid biopsy techniques, which analyze biomarkers present in bodily fluids such as blood or saliva, offer a non-invasive and potentially more accurate screening option for oral cancer. Salivary diagnostics, for instance, can identify specific genetic or proteomic markers linked to OSCC, thereby allowing for the early detection of malignancies without the need for invasive procedures. Additionally, optical detection systems, such as tissue-fluorescence imaging and optical coherence tomography, have demonstrated substantial efficiency in differentiating benign from malignant lesions. These technologies are designed to detect subtle changes in tissue properties and structure, providing a level of detail beyond the reach of traditional visual or manual inspection methods.

Material and methods. Artificial intelligence (AI), and specifically the use of deep convolutional neural networks, represents a significant breakthrough in the field of oral cancer diagnostics. AI-based models have shown a high degree of accuracy in identifying malignant regions, distinguishing them from normal or benign tissues, and aiding in the grading of OSCC. These technologies not only enhance diagnostic precision but also allow for a level of

standardization that reduces human error and improves reproducibility across different clinical settings. Moreover, AI-based tools are increasingly being integrated with other diagnostic methods, including spectroscopy, to produce objective, quantitative, and non-invasive diagnostic data. Such integrations are particularly beneficial in resource-limited settings, where access to specialist healthcare providers may be limited.

Results. Despite these advancements, several barriers continue to hinder the effective implementation of oral cancer screening programs. Financial constraints are a significant challenge, especially in low- and middle-income countries, where healthcare resources are often limited. Additionally, a lack of public awareness about the importance of oral cancer screening and limited knowledge among healthcare providers about emerging diagnostic technologies further impede progress. Many high-risk groups, such as smokers, heavy alcohol users, and individuals with a history of HPV infection, are particularly under-screened due to these systemic barriers. Addressing these issues requires a multifaceted approach that includes increased patient education, improved training for healthcare providers on both traditional and advanced screening methods, and reforms within healthcare systems to make screening more accessible and affordable.

Conclusions. This review highlights an urgent need for more effective, evidence-based screening methods and the continued development of early diagnostic tools. The integration of AI with advanced technologies like spectroscopy offers a promising future direction in oral cancer diagnostics, providing clinicians with tools that are not only highly accurate but also fast and non-invasive. Such characteristics make these methods ideal for widespread clinical use, potentially transforming the landscape of oral cancer detection and management. Ongoing research and development in these areas will be crucial in improving early detection rates, reducing mortality, and enhancing patient outcomes.

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SALIVA SPECTROSCOPY AS A NON-INVASIVE DIAGNOSTIC TOOL FOR EARLY DETECTION OF ORAL CANCER: A LITERATURE REVIEW
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Introduction. Oral cancer is a serious and potentially life-threatening disease impacting millions worldwide. Early detection is essential for effective treatment, but traditional diagnostic methods, such as biopsies, are often invasive and costly. Saliva spectroscopy has emerged as a promising alternative, offering a non-invasive and cost-effective diagnostic approach for oral cancer. Saliva contains numerous biomarkers that may indicate the presence of oral cancer, and spectroscopy techniques can detect changes in their concentration.

The aim of the study. This literature review aims to critically evaluate the current research on saliva spectroscopy as a diagnostic tool for oral cancer. It explores saliva spectroscopy's potential to serve as a non-invasive, cost-effective method for early detection. By analyzing existing literature, the review seeks to determine the diagnostic accuracy of saliva spectroscopy and its implications for clinical practice and future research.

Material and methods. This literature review involved a systematic search of electronic databases, including PubMed, Scopus, and Web of Science, limited to studies published in English from 2013 to 2024. Search terms included "saliva spectroscopy," "oral cancer," "diagnosis," and "biomarkers." Studies were included if they assessed the diagnostic accuracy of saliva spectroscopy in oral cancer detection.

Results. The review included several studies using saliva spectroscopy in disease diagnostics, with a focus on oral cancer. Vibrational spectroscopy techniques, particularly Raman and infrared spectroscopy, showed potential as rapid, label-free, non-invasive tools that provide detailed salivary profiles and aid in biomarker discovery for various diseases, including oral cancer. The literature highlights the role of saliva-based diagnostics in translational cancer research.

Recent studies examined the diagnostic accuracy of saliva spectroscopy for oral cancer but yielded mixed results. For instance, the Cochrane Library review noted an absence of eligible