**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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thing section of the parotid gland and parotid-masticatory area under the control of a binocular magnifying glass; macro- and microscopy; morphometry; computed 3-D design.

**Results**. The parotid gland is found to be located in fetuses with 130,0-375,0 mm of PCL in a deep depression posteriorly the branch of the lower jaw, in the posterior mandibular fossa. A greater part of the gland is located between the mandible and sternocleidomastoid muscle penetrating deeply between these structures. The skin of this particular region is thin, movable. The subcutaneous pot is thin and fused with the skin. The structure of the parotid gland of 4-10month human fetuses is anatomically changeable which is manifested by different shape (oval, leaf-shaped, horseshoe-like, triangle, irregular tetragonal), location and syntopy. Computed 3-D design of the gland presents its volumetric description which is the most practical one – in the shape of trilateral pyramid turned to the malar arch by its base, and to the mandibular angle – by its apex. A number of structures pass through the tissue of the parotid gland including facial nerve, posterior mandibular vein, external carotid artery, auricular-temporal nerve. The parotid duct is formed due to the fusion of two extra-organ lobular branches which in their turn are formed by means of fusion of several upper and lower lobular ducts emerging from the gland tissue passing through its capsule. The direction of the parotid gland is arch-like, with upward convexity. Passing along the external surface of the mastication muscle the parotid duct touches the upper extremity of the adipose body of the cheek and penetrates through the buccal muscle into the oral vestibule where it opens in the shape of a papilla of the parotid duct. The length of the parotid duct in the fetuses of the third trimester is 8,0-26,0 mm, diameter of the lumen is within 0,8-2,5 mm. The parotid duct is projected on the skin of the face from both sides along the line from antilobium to the mouth angle. The wall of the parotid duct consists of the connective tissue rich in elastic fibers and epithelium lying the lumen of the duct. The epithelium consists of two layers, deep cubic and superficial cylindrical.

**Conclusions.** So, morphogenesis and topographic formation of the human parotid gland in fetuses are influenced by a total effect of spatial and temporal factors associated with the dynamics and close syntopic correlation of organs, vascular-nervous formations and fascial-cellular structures of the parotid area. At the end of the $10^{th}$ month of the prenatal development the parotid gland under the microscope demonstrates its practically definite shape, although histological processes of differentiation in it are not completed yet. A study of the specific characteristics and consistent patterns of the morphogenesis and dynamics of the spatiotemporal changes of the salivary glands will make it possible to reveal new findings, pertaining to the emergence of variants of their structure, the preconditions of the onset of the congenital malformations and acquired diseases.

**Oliinyk I.Yu.**

## RESULTS OF ELECTRON MICROSCOPIC ANALYSIS OF THE USE OF AUTOLOGOUS MESOCONCENTRATE PRODUCTS - PLASMA RICH IN GROWTH FACTORS (PRGF)

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**Introduction.** The use of blood plasma in the medical industry and practice has not only made geographical progress, but also significantly expanded the indications for therapeutic and prophylactic treatment. The scientific vector focuses not only on growth factors, but also on a fibrin fiber-based matrix that preserves the natural processes of blood clotting, which is due to the conversion of soluble fibrinogen into an irreversible fibrin gel, of which platelet-rich plasma is and remains an integral part. Proper protocol ordering of fibrin strands ensures the formation of a three-dimensional structure that serves not only as a biological framework with multifunctional properties, but also contains all genetic information with full stimulating content, with a spectrum of active trophic and repair factors - growth factors, in particular, of platelet origin. This study will provide an understanding of the differentiation of mesoconcentrate products by fibrin fiber diameter and density for their clinical use, the formation of a matrix base with the preservation of interfibrin spaces for continuous processes of trophic support and constant physiological remodeling.

**The aim of the study:** to substantiate the effectiveness of the use of autologous mesoconcentrate products - plasma rich in growth factors (PRGF) in clinical dentistry, their interfractional differentiation by the results of electron microscopic analysis.

**Material and research methods.** To study the density (number of occurrences in 10 $\mu m^2$) and diameter (Ø) of the formed fibrin fibers in the PRGF - F1 and F2 fractions of mesoconcentrate products, namely, insulating membranes (M) and obturating blocks (B), we used the method of morphological study using electron transmission microscopy.For evidentiary analytical substantiation, we performed scanning electron microscopy of fibrin strands, which provided high-resolution images of sample surfaces without destroying their architectonics. All electron microscopic studies were conducted in accordance with the Agreement on Scientific Cooperation between Danylo Halytsky Lviv National Medical University of the Ministry of Health of Ukraine and Bukovinian State Medical University of the Ministry of Health of Ukraine for 2024-2029, which is confirmed in the register of registration of agreements of the Scientific Department of BSMU, inc. No. 13/ND-01 dated January 15, 2024.

**Results**. The obtained results confirm the working hypothesis, i.e., the acceptable effectiveness of the study based on statistical analysis, which highlights the reliability of the results with the appropriate level of significance in the interfractional difference of PRGF F1-M, B and F2-M, B with a description of the diametric differences that are interrelated. This analysis of the density and diameter of fibrin fibers based on the results of electron microscopic examination, comprehensively confirmed by scanning electron microscopy and in the above fragment of clinical application, gives priority to the PRGF method with targeted fractional use (F1, F2) of mesoconcentrate products for targeted tissue regeneration, in particular in clinical dentistry according to its extensive indications.

**Conclusion.** The ordering of fibrin fibers in the fractionally formed mesoconcentrate products differs according to the results of intergroup analysis and by the average diameter and their density. The high reliability of the results was established in the third group of the study, where in the fractional comparison between PRGF F1-M and F1-B the value of $p=0.019$, with a slightly lower level of $p=0.024$ in the fractional comparison between PRGF F2-M and F2-B, describes the statistical significance of the diametric differences that are interrelated. The presented rationale is indisputable regarding the need for fractional distribution of autologous mesoconcentrate, followed by the formation of fibrin membranes that will primarily perform a barrier function and fibrin clots (blocks) used for controlled tissue regeneration.

**Pankiv T.V.**

## STRUCTURAL ORGANIZATION OF SUBCUTANEOUS ADIPOSE TISSUE OF THE SHIN IN HUMAN FETUSES IN NORMAL AND PATHOLOGICAL CONDITIONS

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**Introduction.** The early stages of life, especially the fetal stage of ontogenesis, are crucial for shaping metabolic health and obesity risk in adulthood. The prevalence of obesity and the discovery of the broader potential of different types of fat cells have led to a resurgence of scientific interest in the study of adipogenesis.

**The aim of the study.** The study aims to investigate the adipose tissue formation features of the shin in human fetuses of 7-8 months.

**Material and methods.** A microscopic examination of preparations of the upper, middle, and lower thirds of the lower leg of 12 human fetuses with a parietal-coccygeal length (PCL) of 231.0-310.0 mm was carried out. Staining of histological sections with hematoxylin and eosin was used. According to Mikel Calvo's method, a histochemical study of the protein with bromophenol blue was used to better contrast the protein elements of the structures. The percentage of multilocular cells was calculated on digital copies of optical images in the environment of the computer program ImageJ 1.53t (2022) with subsequent statistical processing of quantitative data using the open software "PAST" (Paleontological statistics, version 4.9 2022).