Conclusions: Early diagnostics of lung maturity is crucial for the prompt therapy and for a chance for better quality of life for the newborns. Until now lung maturity is determined by invasive and traumatic analyses of amniotic fluid from mothers and tracheal aspirates from the newborns. Gastric aspirates collection is fast, simple, noninvasive procedure, realized in the first minutes after the delivery. Our results proved that GA can be used as adequate and reliable approach for assessment of surfactant maturity at birth.

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EXPRESSION OF MATRIX METALLOPROTEINASES IN NORMAL ORAL MUCOSA

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Matrix metalloproteinases (MMPs) are Zn$^{2+}$ dependent proteases produced by a variety of cell types. They take a fundamental role in tissue remodeling as well as tumors invasion and metastasis. Collectively they have a broad spectrum of proteolytic activity and are capable of degrading all components of the extracellular matrix. Metalloproteinases are synthesized by both epithelial and connective tissue cells of skin and oral mucosa, but the range and specificity of those produced by a specific cell type under particular conditions varies considerably in different pathological conditions [1]. Recent data from the scientific literature clearly demonstrates an important and critical role played by MMPs and their natural inhibitors in maintaining the normal physiological state of human body tissues as well as mediating various pathological processes, including the pathologies of mucosal lining [2].

Despite a significant number of studies on the expression of MMPs in various pathologies of the oral cavity, there are several studies on the expression of MMPs in the normal mucosa.

Objective. To evaluate MMP-7, -8, -13, -14 expression in the normal oral mucosa.

Materials and Methods. The normal mucosa was obtained from gingival mucosa during the dental implantation procedure. A biopsy of gingival material was analyzed from 30 patients with no visible signs of mucosal change in the material sampling area. Morphometric analysis of the MMPs expression was performed using Aperio Image Scope v9.0 software. The statistical data processing was carried out.

Results. The expression of the studied MMPs was absent or was represented by focal weak expression, the indices of which were statistically insignificant.
Conclusions. The study showed that the expression of matrix metalloproteinases is not typical for the normal oral mucosa. Further studies are aimed at studying the expression of matrix metalloproteinases in pathologically altered mucosa with dysplastic and neoplastic changes. Because of the unclear pathogenesis of some diseases of the oral mucosa their management remains mostly symptomatic treatment. For that reason, understanding of the underlying disease pathways and identifying specific mediators remains an actual direction of research.

References

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FEATURES OF MATRIX METALLOPROTEINASE -7, -8, -13, -14 EXPRESSION IN DIFFERENT TYPES OF PERIODONTITIS

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Periodontal diseases represent a numerous and diverse group of diseases in both clinical and morphological manifestations. There is still need in studying of clear clinical and radiological signs of diagnosis of periodontitis. Further researchers of biomolecular markers in determining the prognosis of periodontitis at the early stages of the disease are in the focus of interest. Objective: to study features of metalloproteinases (MMP)-7, -8, -13, -14 expression in patients dependent upon the type of periodontitis.

Materials and Methods. Biopsy of gingival material was analyzed from 39 patients with aggressive (AP, n=13), chronic simplex (CSP, n=5), chronic complex (CCP, n=12) periodontitis, and a control group (n=9). Morphometric analysis of the MMPs expression was performed using Aperio Image Scope v9.0 software. Spearman and U-test was applied, p<0.05.

Results. Expression of MMP-7, -8, -13, -14 in the biopsy material was obtained in all cases of patients with different forms of periodontitis from mild to severe with a predominance of expression in the stromal component, and to a lesser extent the involvement of the gingival epithelium (except MMP-13, expression of which was detected only in the lamina propria). In the control group, the expression of the studied MMPs was absent or was represented by focal weak expression, the indices of which were significantly lower than in the groups of patients with different forms of periodontitis (p=0.002). The direct correlation between stromal expression of the studied MMPs (p=0.68, p=0.59, p=0.77 for MMP-7, MMP-8, MMP-14, respectively, p<0.05) with the epithelial expression of appropriate MMPs and severity of inflammation, and epithelial expression of MMPs with the severity of interepithelial infiltration of leukocytes were revealed. Also, a correlation between the stromal expression of MMP-14 with that of MMP-13 and MMP-7 (p=0.52 and p=0.56, respectively) was found. The “hot point” analysis of the MMPs expression revealed significantly lower levels of stromal expression of MMP-14 and MMP-7 (U=12.5 p=0.033 and U=30.5; p=0.02) in the group of the AP in comparison with the CSP and CCP, respectively, and higher stromal expression of MMP-8 (U=18 p=0.001) in the AP group compared to the CCP.

Conclusions. The expression pattern and indices of the studied MMPs are interrelated both with each other and with the degree of inflammation and can be considered