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Реферати

ОСОБЕННОСТИ ГИСТОЛОГИЧЕСКИХ, ЭЛЕКТРОННОМИКРОСКОПИЧЕСКИХ И ЦИТОМЕТРИЧЕСКИХ ИЗМЕНЕНИЙ ПОКАЗАТЕЛЕЙ СЛИЗИСТОЙ ОБОЛОЧКИ ПОДВЗДОШНОЙ КИШКИ ПРИ ИСПОЛЬЗОВАНИИ РАСТВОРОВ ЛАКТОПРОТЕИНА С СОРБИТОЛОМ ИЛИ HAES-LX-5%

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Экспериментальное исследование действия инфузионных препаратов 0,9 % раствора NaCl, лактопротеина с сорбитолом и HAES-LX-5 % на структуру подвздошной кишки в поздние сроки (через 14, 21 и 30 суток) после предварительного их введения были выполнены на 63 лабораторных белых крысах-самцах массой 150-160г. При гистологическом и электронномикроскопическом исследовании установлено, что общий план ее строения, подобный интактным крысам. Инфузия в течение первых 7 суток 0,9 % раствора NaCl, лактопротеина с сорбитолом или HAES-LX-5 % не изменяет показатели клеточного цикла клеток слизистой оболочки тонкой кишки через 14, 21 и 30 суток наблюдения. Полученные результаты указывают на существование значительной резервной группы клеток ее слизистой оболочки.

Ключевые слова: подвздошная кишка, крысы, клеточный цикл, лактопротеин с сорбитолом, HAES-LX-5%.

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FEATURES OF HISTOLOGICAL, ELECTRONOMICROSCOPIC AND CYTOMETRIC CHANGES OF THE FLEXIBLE MALT OF THE FOLK TUBE FOR THE USE OF LACTOPROTEIN SOLUTIONS WITH SORBITOL OR HAES-LX-5%

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An experimental study of the effect of infusion drugs of 0.9 % NaCl solution, lactoprotein with sorbitol and HAES-LX-5 % on the structure of the ileum in the late stages (after 14, 21 and 30 days) after their previous administration was performed on 63 white rats- males weighing 150-160 g. During a histological and electron microscopic examination it was established that the general plan of its structure is similar to that in intact rats. Infusion during the first 7 days of 0.9 % NaCl solution, lactoprotein with sorbitol or HAES-LX-5% does not change the cell cycle of cells of the mucous membrane of the small intestine in 14, 21 and 30 days of observation. The obtained results indicate the existence of a large reserve group of cells in its mucous membrane.

Key words: ileum, rat, cell cycle, lactoprotein with sorbitol, HAES-LX-5%.

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FEATURES OF THE CELL COMPLEX OF THE MORTAL SHELL OF THE ROPE CAVITY ON THE FIELD OF TOLERANCY

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The article presents the results of a comprehensive morphological study of the oral mucosa in conditions of nicotine intoxication obtained in a comprehensive and statistic cytological study. The results make it possible to characterize the changes described as «dyskeratotic» or «proliferative», which are a cytooriental dyskeratosis as a violation of keratinization of the epithelium of the anatomic site. The analysis we proposed schemes pathogenesis, and the existence of common components in its levels, permits to consider restructuring resulted cytological – «inflammatory» type cytothram and «dyskeratotic» as two independent processes arising in the oral mucosa under the influence of nicotine and level the same pathogenic mechanism for precancerous stage of transformation.

Key words: mucous membrane, epithelium, cells, nucleus, cytoplasm.

Literary sources of recent years have presented facts of increased risk of malignant proliferative processes of the oral mucosa, in patients with the presence of a harmful habit - smoking, which combines the effect of physical and chemical factors [9].

Particular relevance of the study of oral mucosa in smokers is due to medical and social importance of this problem. Currently smoking is the mass social and psycho-emotional problem common among men and women. Therefore, in many countries is active fight against smoking in the framework of the World Health Organization [3].

Now, in the literature in detail described changes of hard tissues of the teeth, salivary glands, periodontal while smoking [5, 8].

However, the oral mucosa, by virtue of their topographic-anatomical features, first of all is suffer from harmful habit of smoking. Different components that are part of tobacco smoke adversely affect its

structure, function and considered by a number of authors [1, 10] as important etiological factors of early aging of body and precancerous states mucosa followed by malignancy [4, 6].

In addition, the initial morphological and functional disturbances the subsequently trigger the disease have not been studied to date.

In particular, there are no data regarding the features of differentiation and keratinization of various types of epithelium of the mucosa, its functional disorders, and essence of pathological process of developing in the background of a harmful habit.

Knowledge of the above parameters will allow estimation of early changes, detection reserve capabilities and compensatory mechanisms of oral mucosa to the influence of tobacco smoking. This will help in solving primary prevention problems of diseases in this anatomical localization, the relevance of which is caused by an extremely low percentage of people who refuse to smoke even after individual information about the unsatisfactory state of the oral mucosa [12, 13, 14].

The purpose of the study was the definition of pathogenetic mechanisms for the restructuring of the cellular composition of the mucous membrane of the oral cavity and cytological criteria for predicting the occurrence of pre-tumor changes in conditions of nicotine intoxication.

Materials and methods. The material used for this study was buccal epithelium, taken from 25 men of the young age. The main including criteria among subjects were: the presence of a harmful habit – smoking, the duration of which did not exceed the term of 3 years, and the absence of concomitant somatic pathology. The epithelium was taken with a spatula, then transferred to the slide and dried at open air for 3-5 minutes. The coloration of the material was carried out by Gimza-Romanovsky, followed by microscopic and morphological analysis, taking into account the percentage ratio of different forms of epithelial cells in normal

Parametric methods were used for indicators, the distribution of which met the requirements of normality. For assess of characterization of the distribution, the coefficient of asymmetry and excess was determined. Shapiro-Wilks normality test was performed. The reliability of the differences in the results obtained for different groups was determined using Student's t-test. Statistical significance was set at $p < 0,05$. The probability of error was estimated by Student's tables taking into account sample size. In cases where the distribution law was statistically different from normal one, the nonparametric Mann-Whitney U-test was calculated as a nonparametric analog of the Students t-criterion.

Results of the study and their discussion. The cell composition of the cytogram is represented by parabasal ($4,30 \pm 0,21$), intermediate ($76,10 \pm 1,61$) and surface cells ($9,10 \pm 0,42$), and also horny scales ($10,50 \pm 0,38$).

At the same time, we noticed a probable decrease in the number of intermediate cells against the background of an increase in the number of surface epitheliocytes and horny scales compared with the identical cytogram values in norm.

Parabasal and part of intermediate epithelial cells are characterized by identical cytological organization and correspond to cytospecificity of this class of cells in normal. However, their quantitative composition has changed in the direction of a probable increase.

Among intermediate epithelial cells, cells with signs of cytopathology in the form of vacuolation of the cytoplasm are visualized. It should be noted that the vacuoles are predominantly placed on the perinuclear surface and do not extend to the poles of the cell. Among intermediate epithelial cells, cells with signs of cytopathology in the form of vacuolation of the cytoplasm are visualized. It should be noted that the vacuoles are predominantly placed on the perinuclear surface and do not extend to the poles of the cell. In addition, in a number of cytograms are determined cells of whose cytoplasm, (stained by the method of Gimza-Romanovsky), is changed their tincture properties and acquires different shades of blue color. These changes are due to the intensification of accumulation in it of excess amount of keratogialin – as a reaction to chronic irritation of cells, in particular by the nicotine. As a result, hyperkeratosis changes in the cytoplasm of intermediate cells, which creates the preconditions for pathological keratinization. Cells are located mainly in clusters.

Among representatives of the cells of the hematogenous series, leukocytes of various functional states are visualized. It should be noted that the number of leukocytes in the cytograms is much smaller in comparison with the cytograms of the inflammatory type described by us. The cytoplasm of some of them is well contoured, but the nuclei degenerately altered. Lysed leukocytes are almost absent.

Surface cells contain hyperchromatic picnotial nuclei, the cytoplasm is not clearly defined, and somewhere is weaved. The peculiarity of demonstrated cytograms is the presence of macrophages that are in a state of functional rest, which, in addition to participation in reactions of non-specific immunity, exhibit themselves in reactions of specific immune defense against bacterial agents as antigen-presenting cells.

Studies of recent years suggest that macrophages are activated by cytokines, have antitumor activity. It can be related both to the phenomenon of the phagocytic reaction itself and to the process of mediated TNF α , which is synthesized by cells of the immune system [11].

In this case, the probable increase in the number of superficial cells with picnotial nuclei is determined. Fragments of the cytoplasm of these epitheliocytes have the ability to form common spaces between themselves that undergo spiral-shaped wrapping.

The number of horny scales increases sharply, increases, but their cytological organization remains stereotyped for the final stage of differentiation of epithelial cells.

The obtained results of our study, give us an opportunity to establish the percentage correlation of different classes of epithelial cells for the examined subjects – $(4,30 \pm 0,42; 76,10 \pm 1,86; 9,10 \pm 0,67; 10,50 \pm 0,92)$.

The obtained data are likely to differ from the percentage of buccal epithelium in norm [2], and from the proposed criteria we determined for the persons examined for the sample, taking into account age and gender.

A detailed analysis of the type of cytogram given by us corresponds to the cytomorphological picture, which reflects a steady tendency towards the development of dyskeratosis – violation of the keratinization of the epithelium.

Qualitative changes in the cells are manifested by a cytosolic organization, characteristic of a variety of protein degeneration, namely, the keratin, which is characterized by superfluous formation of keratin substance in the statum corneum - hyperkeratosis on the mucous membrane of the oral cavity. The given changes of cellular composition create preconditions for development on mucosal leukoplakia, which belongs to precancerous conditions [6, 7].

Quantitative changes are manifested in the form of a percentage reduction of different classes of cells in comparison with the control group, and the appearance of parabasal epithelial cells. Qualitative, in turn, manifest themselves in the form of a change in the tinctor properties of the components of the cytoplasm, which, when identified by Gimza-Romanovsky, are characterized by a change in the coloration of the cytoplasm in various shades of blue due to increased synthesis and accumulation of keratogialin. Numerous epithelial cells have signs of cytopathology in the form of cytoplasmic vacuolization and erosion of the plasmolemic contours. A detailed analysis of the cytogram has given us the opportunity to propose a scheme for the mechanism of dyskeratous changes in the multilayered flat epithelium under the influence of nicotine.

Conclusion

The obtained results allow to characterize the described changes as "dyskeratosis" or "proliferative", which in themselves carry guidelines of dyskeratosis in the form of violation of the corneal epithelium of this anatomical site. The analysis of the pathogenesis schemes proposed by us, and the presence of common components in its links, makes it possible to consider the cytological transformation presented - the "inflammatory" type of cytogram and "dyskeratosis" as two autonomous processes that have arisen on the mucous membrane of the oral cavity under the influence of nicotine, and links of the same pathogenetic mechanism at the stage of pre-tumor transformation.

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Реферати

ОСОБЛИВОСТІ ПЕРЕБУДОВИ КЛІТИННОГО СКЛАДУ СЛИЗОВОЇ ОБОЛОНКИ ПОРОЖНИНИ РОТА НА ТЛІ ТЮТЮНОПАЛІННЯ

Гасюк Н.В., Єрошенко Г.А., Майстрюк П.О.

В статті приведені результати комплексного морфологічного дослідження слизової оболонки порожнини рота у курців, отримані шляхом комплексного цитологічного та статистичного вивчення. Приведені результати, дають можливість характеризувати описані зміни, як «дискератозні» або «проліферативні», які в собі несуть цитологічні ознаки дискератозу у вигляді порушення зроговіння епітелію даної анатомічної ділянки. Аналіз запропонованих нами схем патогенезу, і наявність спільних складових, в його ланках, дає можливість розглядати приведену цитологічну перебудову – «запальний» тип цитограм та «дискератозний» як два автономних процеси, які виникли на слизовій оболонці порожнини рота за умов впливу нікотину, так і ланки одного і того ж патогенетичного механізму на етапі передпухлинної трансформації.

Ключові слова: слизова оболонка, епітелій, клітини, ядро, цитоплазма.

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ОСОБЕННОСТИ ПЕРЕСТРОЙКИ КЛЕТОЧНОГО СОСТАВА СЛИЗИСТОЙ ОБОЛОЧКИ ПОЛОСТИ РТА НА ФОНЕ ТАБАКОКУРЕНИЯ

Гасюк Н.В., Єрошенко Г.А., Майстрюк П.О.

В статье приведены результаты комплексного морфологического исследования слизистой оболочки полости рта у курильщиков, полученные путем комплексного цитологического и статистического изучения. Данные результаты, дают возможность характеризовать описанные изменения, как «дискератозные» или «пролиферативные», которые в себе несут цитологические критерии дискератоза в виде нарушения ороговения эпителия данной анатомической области. Анализ предложенных нами схем патогенеза, и наличие общих составляющих, в его звеньях, дает возможность рассматривать приведенную цитологическую перестройку – «воспалительный» тип цитограм и «дискератозный» в виде двух автономных процессов, которые возникли на слизистой оболочке полости рта в условиях курения, так и звенья патогенетического механизма на этапе предопухолевой трансформации.

Ключевые слова: слизистая оболочка, эпителий, клетки, ядро, цитоплазма.

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PATHOMORPHOLOGICAL CHANGES OF RESPIRATORY DEPARTMENT OF LUNGS DUE TO MULTIPLE SKELETAL TRAUMA WITH THE USE OF INTRAMEDULLARY OSTEOSYNTHESIS IN THE EXPERIMENT

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Experimental study was carried out on 90 white male Wistar line rats and defined microscopic and ultrastructural changes of the respiratory department of the lung due to multiple skeletal trauma with intramedullary osteosynthesis use in dynamics (6, 24, 72, 168 hours) by lightoptical and electron microscopic methods. It was proved that intramedullary osteosynthesis of the femoral bones bring on severe changes of the structural organization of all components of the respiratory department of the lungs during the first 24 hours after the trauma. In the respiratory department there was both dystrophic-destructive and compensatory-adaptive changes during 72-168 hours of the study.

Key words: lungs, respiratory department, experimental multiple skeletal trauma, intramedullary osteosynthesis.

The study is a fragment of the research project «Pathogenetic mechanisms of development changes in the organs of the respiratory, endocrine and nervous systems in the various pathological models and their correction» (state registration No. 0117U001758).

Polytrauma is a complex of completed biochemical and immune reactions that cause homeostasis disorders, multiple organ failure syndrome (MOFS), acute lung injury (ALI), sepsis and high mortality as well [1, 3, 5, 7, 8].

Prevalence of multiple injuries is 5.5-35 % of all traumas [2].

Researches of the most appropriate tactic of treatment of bone and joint system injuries are getting from the second half of the XX century until now. It is very important if needed to make surgery, especially long bones osteosynthesis. The best method of treatment of the long bone fractures is intramedullary osteosynthesis, but there are contraindications of its use, as risk of AII and MOFS [9, 10].

The purpose of the experimental study was to determine microscopic and ultrastructural changes of the respiratory department of the lung due to multiple skeletal trauma with intramedullary osteosynthesis use in dynamics.

Materials and methods. Study was made on 90 white male Vistar rats with bodyweight 180-230 g. Animals were distributed on three groups: I – modeling of multiple skeletal trauma (40 animals), II – modeling of multiple skeletal trauma + intramedullary osteosynthesis (40 animals) and III – intact (10 animals). All animals in group I and II were done modeling of multiple skeletal trauma – osteotomy of the both femur bones in the middle part according to the own technique [4]. Animals of the II group accept of