

PATHOMORPHOLOGICAL CHANGES IN THE RESPIRATORY TRACTS AS A RESULT OF CONSTANT EXPOSURE TO SALT DUST IN THE ARAL SEA REGION

(EXPERIMENTAL RESEARCH).

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Relevance of the topic: In recent years, the sharp change in the environmental situation in the Aral Sea region, the drying up of the seabed, and the dispersal of salt dust into the atmosphere have been considered significant factors negatively impacting public health. The constant entry of salt dust particles into the respiratory tract can cause inflammatory, dystrophic, and sclerotic changes in the bronchial and pulmonary tissues. The experimental study of the morphological characteristics of these changes is of great importance in determining the pathogenetic mechanisms of respiratory system damage.

Purpose of the work: To study pathomorphological changes occurring in the respiratory tract and lung tissue as a result of constant exposure to salt dust under experimental conditions and to evaluate the characteristics of their development.

Research materials and methods: The study was conducted on experimental animals, namely white rats, by modeling the effects of salt dust. Samples of trachea, bronchi, and lung tissue from the control and experimental groups were examined histologically. Morphological changes in the epithelial layer, mucous membrane, bronchial wall, alveoli, and interstitial tissue are evaluated using hematoxylin-eosin and, if necessary, special dyes. Morphometric and statistical analysis methods are used.

Results obtained: It was established that as a result of constant exposure to salt dust, dystrophic changes occur in the epithelium of the respiratory tract mucosa, inflammatory cell infiltration, changes in mucosal secretion, and structural reconstructions of the bronchial wall. Changes in the alveolar wall, interstitial edema, and signs of inflammation may be observed in the lung tissue. The degree of these changes was assessed depending on the duration and intensity of the exposure.

Conclusion: 1. Long-term exposure to salt dust led to the development of morphological changes in the respiratory system.

2. Experimental pathomorphological studies identified the characteristics and developmental stages of these changes.

3. The pathogenesis of respiratory diseases associated with environmental factors in the Aral Sea region has been studied in depth, and a scientific basis has been established.

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