

POSTER PRESENTATION

THE USE OF CLARA CELLS AS A MARKER OF PULMONARY DAMAGE CAUSED BY TOXIC SUBSTANCES

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Introduction: the recent specific literature identifies as possibile markers of pulmonary damage caused by toxic substances particular cells located in the bronchoalveolar epithelium (Clara cells) that seems to undergo morphological (differentiation in cilia cells) and numerical (mitotic hyperactivity) changes, under adequate chemical damage stimulus.

Materials and methods: a study, aimed to find these cells in the lungs of 177 subjects deceased from January 1993 to December 2008 by poisoning attributable to accidental or voluntary intake of drugs and toxic substances, was performed. 50 control cases, relating to subjects deceased for natural causes or for other manner of death, were considered. Because Clara cells are located in the bronchoalveolar epithelium, a histopathological analysis of the lung was performed, according to the common post-fixation techniques, using Hematoxylin-Eosin staining, Masson's trichrome staining and PAS staining to reveal the existence of possible changes of these pulmonary markers, expression of the endogenous toxic substances intake.

Results: valuing the epicrisis of pulmonary situation of subjects deceased for acute intoxication by drugs and toxic substances, changes of the endoalveolar cells were found, in particular of type I and type II pneumocytes, expression of oxygenative-respiratory alveolar damage, and of Clara cells in active form, e presenting cilia and mitotic proliferation. These changes were not found in the control cases.

Conclusions: the histomorphological results together with the anamnestic-circumstantial data allowed to correlate the number of Clara cells with survival time, according to a direct proportionality relation; this result is very useful in medical-legal field, especially when adequate anamnestic and circumstantial information are not available: in fact, Clara cells, if found histomorphologically in active form (with cilia) and in mitotic hyperactivity, can point out early the pulmonary damage caused by toxic substances.