

4. In the lung cancer patients the IgG/IgM factor value increases almost by an order compared to the control group.

5. We suppose that the IgG/IgM factor can be used at the health status monitoring of the lung cancer risk group persons (coke and by-products process, chemical, mining and heat and power plants' workers).

The work was submitted to VIII international scientific conference « Ecology and environmental management», Egypt (Sharm el-Sheikh), February, 20-27, 2009, came to the editorial office on 16.01.2009.

#### AGE-RELATED IMMUNOHISTOCHEMICAL CHANGES OF THE THYROID GLAND DURING EARLY POSTNATAL DEVELOPMENT IN RATS

Kapitonova M. Yu., Dalliana Adia Bte Abd Latif,  
Gupalo S.P.

*Faculty of Medicine, UiTM, Shah Alam, Selangor,  
Malaysia*

Thyroid gland comprises two parts which are different in structure, function and origin, namely follicular and parafollicular compartments with thyrocytes and calcitoninocytes as the main cellular populations in them accordingly. Thyrocytes constitute simple epithelial lining of the follicles and originate from the endodermal epithelial lining of the pharyngeal floor, while calcitoninocytes may either be present interfollicularly or included in the follicular epithelial lining being separated from the colloid by the intertwining processes of the neighboring thyrocytes, they originate from the 4<sup>th</sup> pharyngeal pouch populated by the neural crest cells and are considered to be APUD-cells (K.Pacak et al., 2001; J.Seidel et al, 2003; J.Dadan et al., 2004; M.K.Irmak et al., 2004; Y.Kameda et al., 2007). For a long time calcitoninocytes were thought to have no significance for the calcium metabolism control, but later investigations revealed their important role in stress-related activation of the hypothalamo-hypophyseal-thyroid axis (N.Pondel et al., 2000; V.Rajkovic et al., 2001; M.A. Titova et al., 2003; V.I.Loginov, 2007). Recently evidence was provided that close functional interactions between the two cellular types are controlled by the paracrine mechanism (B.Sawicki et al., 2002; R.L.Zbuckie et al., 2007; M.Gutiérrez-Mariscal et al., 2008). After birth thyroid gland undergoes significant structural and functional changes in the follicular compartment (S.K.Banu et al., 2001; 2002; D.G.Moreira et al., 2005). The dynamics of the parafollicular cell population and their interaction with the follicular cells after birth was not described before.

The objective of the present study is to evaluate age-related changes in the follicular and parafol-

licular compartments of the thyroid gland in the growing body.

Thyroid gland of the Spargue-Dawley rats aged 14 days (preweaning period), 21 days (weaning period) and 30 days (infant period) was sampled, fixed in formalin, embedded in paraffin, serially sectioned and stained by hematoxylin-eosin and immunohistochemically for thyroglobulin (marker of thyrocytes) and calcitonin (marker of calcitoninocytes) using biotin-streptavidin-peroxidase complex technology with subsequent image analysis of the immunohistochemically stained sections by the Leica image analyser (Germany) with Leica QWin software (Great Britain).

The results obtained demonstrated that during early postnatal ontogenesis in rats both follicular and parafollicular compartments undergo significant morphological and immunohistochemical changes which may be quantitatively evaluated. These changes include morphometric parameters of the follicles and distribution of the calcitoninocytes and thyrocytes in the parenchyma of the thyroid gland. It was shown that in the follicular compartment the developmental changes include an increase of the average thyrocyte height and follicle diameter (difference between the 14-day and 30-day old rats being significant,  $p < 0,05$ ), while the numeric density of the follicles was significantly reduced from preweaning to infant period, and changes of the activation index with age did not reach a level of significance. The volume density of the thyroglobulin-immunoreactive cells was slightly higher in the weaning rats compared to the preweaning pups and in the infant rats compared to the weaning one, while in the infant rats it was meaningfully increased ( $p < 0,05$ ) compared to the preweaning animals. The volume density of the calcitoninocytes was increasing with age reaching the level of significance by the infant period. Correlation analysis demonstrated that in the preweaning and weaning rats negative correlation between the number of calcitoninocytes and thyrocytes was insignificant, while by the infant period this correlation became strong and significant ( $r = -0,71$ ;  $p < 0,05$ ). These observations demonstrate that by the infant period the thyroid gland of the growing rats reaches certain level of functional maturity, which may contribute to the developing adaptational potential of the body in the changing environmental conditions to which thyroid gland is extremely sensitive. This observation should be taken into consideration in evaluation of the adaptational changes of the thyroid gland as a peripheral link of the hypothalamo-hypophyseal-thyroid axis under stress conditions.

The work was submitted to international scientific conference «The development of the scientific potential of high school», UAE (Dubai), March 4-11, 2009. Came to the editorial office on 23.01.2009.

### CLINICAL PECULIARITIES OF OUT-HOSPITAL PNEUMONIA AMONG ELDERLY PATIENTS

Kudryasheva I.A., Polunina O.S., Galimzyanov H.M.  
*SEI HPE Astrakhan State Medical Academy, RHP*

Out-hospital pneumonia (OHP) is one of the most distributed diseases of respiratory organs. Significant factor of risk development is the elderly age.

The aim of investigation is to analyse and clear up the clinical peculiarities of course of out-hospital pneumonia among elderly patients.

Material and methods. There were observed 229 patients of elderly age (60-74) with OHP. The patients with severe damage of internal organs were not included in the group of investigation. The verification of diagnosis was made on the base of clinicolaboratory methods of investigation, according to diagnostic standards in treating patients with pneumonia. Dynamic observation, complex laboratory and instrumental-functional investigation were done in conditions of curative-prophylactic institutions of Astrakhan.

Results of investigation. The bacteriologic investigation gave the possibility to find etiologic factor of OHP in all 229 patients. Identified excitors were distributed in the following type: Streptococcus pneumoniae – 35,2%, Haemophilus influenzae – 23,8%, Staphylococcus aureus – 4,8%, Enterobacteriaceae – 7,6%, association of gram-positive and gram-negative flora in 28,1% cases. Given results were coordinated with literary data about etiology of pneumonia in persons of elderly age groups. Pneumonia was confirmed in all patients roentgen logically. 120 patients showed low lobe pneumonia, 75 right side, 39 – left side localization. 70 patients showed upper lobe right side pneumonia, 35 – by-side low lobe pneumonia.

The analysis of course of disease in 229 observed patients of elderly age with OHP found out the clinical peculiarities of the following types: slight expression of symptoms, difficulty in determination of nature during percussion of parts in lungs, frequent absence of acute onset of disease, frequency and expression of disturbances of central nervous system (mixture of consciousness, slow reaction, disorientation), weak general condition, decrease of physical activity, losing of capabilities of self-service, appearance to the first front of symptoms in superficial diseases in clinical picture, prolong resorption of lung infiltration, difficulties in making differentiated diagnosis between first and second character of pneumonia. «Gold standard» in diagnostics of pneumonia: fever, cough, sputum, leucocytosis, lung infiltration, all of them were found out in 47% of cases among elderly patients, it was lower than in patients of young age (difference is significant statistically, 95% of proving). Among patients of elderly age the OHP was in 37,4%

in patients with elderly age. Bed-day in patients of elderly age was 24,4 days, in young persons – 15,2/

Received data showed the necessity of careful care to verification of diagnosis in case with OHP in persons of elderly age.

The work was submitted to international scientific conference «Present-day problems of experimental and clinical medicine», Thailand – Cambodia, February 18-28, 2009. Came to the editorial office on 22.01.2009.

### APOPTOSIS REGULATION IN SINCYTIOTROPHBLAST AT HERPETIC LESION

Lutsenko M.T., Andriyevskaya I.A.  
*Far Eastern Research Center of Respiration  
Physiology and Pathology  
Blagoveschensk, Russia*

The activity change of syncytiotrophoblast nuclei apoptosis, which is under the control of apoptosis regulators sAPO-1 and Bcl-2 and proinflammatory cytokine TNF $\alpha$ , is a leading pathogenetic phenomenon at a herpetic lesion. A poor quantity of research on the given problem has defined the purpose of the presented work, which consisted in the syncytiotrophoblast nuclei apoptosis intensity and behavior appraisal depending on the herpetic infection aggressiveness and functional activity of the systems regulating the apoptosis.

20 mature placentas taken during the term birth process from practically healthy mothers - the control group, 30 - from the women with a severe form of the disease (HSV-1 antibody titer - 1:12800) and 20 - from the women with an average severity form of the disease (HSV-1 antibody titer - 1:6400) served as the test material for the study. To get the placental extract (villous chorion) the placental tissue washed from blood cells in the PBS solution was homogenized. The supernatant fluid was aliquoted and stored at -20 °C before the EIA was carried out. To detect the sAPO-1, Bcl-2 and TNF $\alpha$  expression the “Bender Med Systems” (Austria) firm’s sets were used. The HSV-1 verification and the disease intensity were estimated on the IgG antibody titers’ dynamics in the peripheral blood with the help of standard test-systems of the “Vector-Best” firm (Novosibirsk). The morphologic detection of apoptosis was performed on paraffin sections of the uterine cake owing to the DNA fragments’ end marks according to the ISEL-method. The statistical data processing was performed by means of the computer program “Computer-aided periodic health examination” using the t-criterion of Student.

The carried out system analysis testified that in cases of severe form herpetic infection in the period of gestation a statistically authentic growth of the sAPO-