

### BALNEOTHERAPY AS CHOLELITHIASIS DEVELOPMENT PREVENTION IN DIABETES PATIENTS

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A high bile passages disease incidence, close anatomical and functional relation of the hepatobiliary system and pancreatic gland make the problem of biliary pathology clinical aspects study at diabetes (D) rather topical one.

In this connection the hepatobiliary system morphofunctional state estimation and "Metallurgist" sanatorium mineral water study have been of a certain scientific interest.

260 I and II D type patients with the concomitant biliary pathology confirmed by laboratory-instrumental methods of diagnostics were included into the examination. The obtained results of the carried out research testify that in 52% of the diabetes concomitant biliary pathology cases the chronic non-calculolitis cholecystitis (CNC) has been detected. It is important to note that cholelithiasis and cholecystectomy after condition made the rest considerable part (48%). In connection with this the study of the clinical picture of CNC taking course against diabetes is of great interest, as it is this very stage when the prevention of concrement formation in the biliary tract is possible. A greater value of this problem is found among the patients with II type diabetes, as it is among them CNC was registered in 59% of the cases.

For the purpose of cholelithiasis development prevention all the II type diabetes associated CNC patients were individually prescribed the "Metallurgist" sanatorium sulphate-chloride-sodium low-mineralized mineral water together with the traditional drug therapy. At the efficiency analysis of the carried out course mineral water treatment a great attention was paid to the dynamics of clinical presentations and laboratory-instrumental research methods data. A durable positive curative effect, which was achieved in shorter terms than in the patients having got the drug therapy only, is marked. At the duodenal drainage carrying out after the treatment the bile lithogenicity decrease, disappearance of inflammation signs in the bile passages are registered. The dynamic hepatobiliscintigraphy results showed that drinking spa treatment promotes the hepatocytes' absorbing-excretive function improvement. According to the dynamic echocholecystography data the evacuation function of the bile cyst improves authentically ( $K_{\text{eff}} = 52,33 \pm 1,19\%$ ,  $p < 0,01$ ) after the mineral water course treatment, and, as a consequence, the rest amount of bilis decreases ( $V_k = 15,46 \pm 0,42 \text{ cm}^3$ ,  $p < 0,01$ ).

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### AGE-RELATED CHANGES IN THE STRUCTURE OF ADENOHYPOPHYSIS DURING EARLY POSTNATAL ONTOGENESIS

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The hypothalamo-pituitary-adrenocortical axis plays a vital role in adaptation of the organism to homeostatic challenge (J.P.Herman et al., 2003). During most of infancy, from approximately postnatal day 4 to 14, the rat displays a stress hyporesponsive period in the form of markedly attenuated adrenocorticotropin and corticosterone responses to environmental stressors that elicit pronounced elevation of ACTH and corticosterone in pre- and post-stress-hyporesponsive period rats (J.Lehman et al., 2002). After that the pituitary gland undergoes the prominent age-related adaptation changes. The different cell types in the anterior pituitary behave as dynamic populations, as the hypophysis maintains a continuous renewal of cells to ensure a balance between cell division, differentiation, growth arrest and apoptosis (L.Claudius et al., 2006). Numerous discrepancies in the evaluation of activation, hyporesponsiveness, facilitation and dissociation of the hypothalamo-pituitary-adrenocortical axis in the early age may be explained by a very limited information available in the literature on the age-related structural changes in the central link of the axis - adenohipophysis - during early postnatal development (C.Kaur et al., 2002; A.Armario et al., 2004; X.Belda et al., 2004; C.Marquez et al., 2005).

The objective of this study was to evaluate the developmental changes in the pituitary gland of the growing rats during early postnatal development using the modern methods of the quantitative immunohistochemistry.

Prewaning, weaning and early postweaning Sprague-Dawley rats aged 14, 21 and 30 days after birth (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> age groups accordingly) were weighed and sacrificed by cervical dislocation, their pituitary glands were removed, weighed, fixed in formalin and embedded in paraffin. Serial sections 4 mcm thick were stained with hematoxylin-eosin and immunohistochemically with monoclonal antibodies against ACTH and PCNA using streptavidin-biotin-peroxidase method with subsequent DAB-staining and image-analysis of the immunohistochemically stained slides. Image Pro Plus 4.5 software was utilized to evaluate the volume and numeric density of the immunoreactive cells.

The results obtained in the present investigation demonstrated that the pituitary gland mass in-