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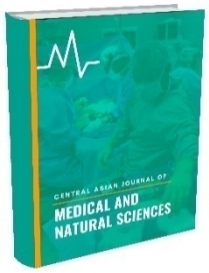

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Dynamics of Fat Cells of the Bronchial Tree Mucosa in Postnatal Ontogenesis

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ABSTRACT: This article was aimed at studying the structure of different densities of fat cells in the mucous membranes of the bronchi tree in the stage of postnatal ontogenesis in children under three years of age and the examination was carried out. Fat cells in children under the age of one year are 10-12 µm, and with age, they also grow and divide into large, medium and small fat cells. The number and types of fat cells in the mucous membrane of the bronchi of the Bee, which the child has grown in age, have increased to the age of 3 years, and the main part is made up of 2-type cells.

Keyword: postnatal ontogenesis, bronchi tree, fat cell, asynchronous, mucous membrane, morphometry, baby.

Relevance: Diseases of the pulmonary-bronchial system in premature infants, the incidence of chronic lung disease remains one of the most serious problems facing the world health system. (Radzinskiy V.E, 2009 Volodin N.N, 2009, Volyanik E.V, 2010, Stepanova O .A, 2010, Zaugstad O.D, 2011, Valiulina A.Ya, 2013, Fraser D. W, 2005).

Particular attention was paid to the improvement of the embryogenesis, structure, innervation, vascular supply of the organs of the respiratory system, especially the segmental structure and skeletopy of the lungs, the structure of the atsinus. [1] However, bronchial tree structure and morphometric analysis were not performed.

Branching of the pulmonary bronchi in the fetus develops from the ventral part of the intestinal tract before 4-6 weeks, and the development of the bronchial wall from the endoderm and mesoderm, from the 20th week of pregnancy revealed the beginning of the formation of pulmonary surface gas exchange processes. [2]

It is known that the lungs perform very important functions, including gas exchange, lipid metabolism, endocrine metabolism, and metabolism of biologically active substances. The epithelium of the lungs acts as a barrier. [3]

During the study, it is known from the literature that fat cells always change their state, even several times a day, which differs from other cells by its individuality and variability with age. [4]

Therefore, it is important to study the structure of fat cells of different densities in the bronchial mucosa. Vital studies have shown that the number of fat cells in the mucous membrane of the

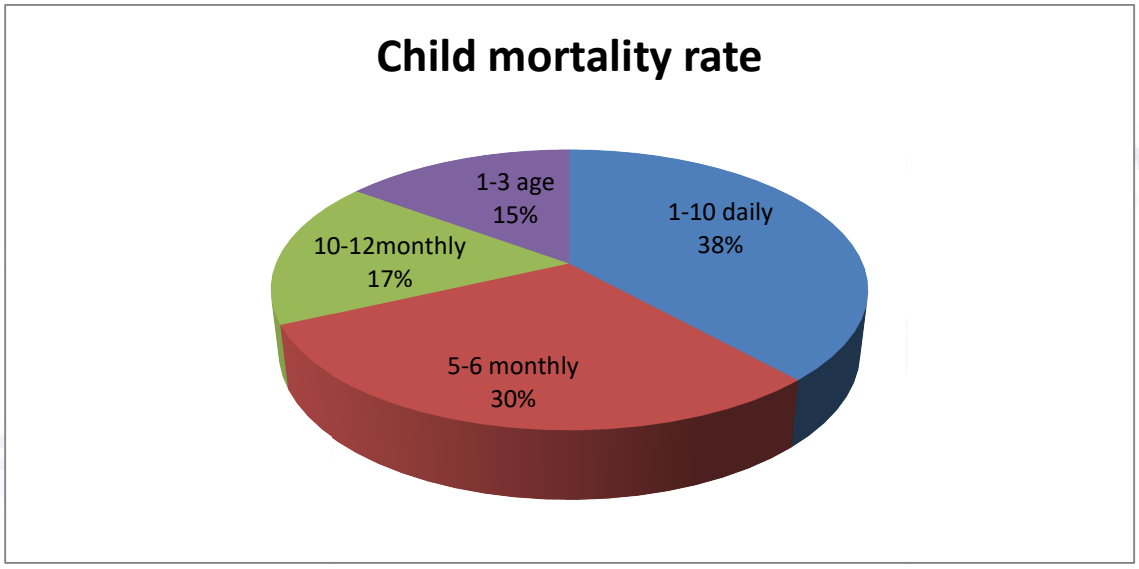
bronchial tree in the lungs of a healthy child increases from 74.8 to 87.2.2 in bronchial asthma to 135.6 (in 1 mm2 epithelium).

Purpose of the study: Since similar scientific studies have not been determined with age, we aimed to study the number and density of fat cells in the mucous layer of the bronchial tree of different calibers (large, medium, small) in infants under 3 years of age.

Research methods and results: Morphometric analysis of fat cells in the mucous membrane of the bronchial tree of various calibers was conducted in 1980 by D.P. Determined by Lendner's description. Targeted histological incisions were taken from different parts of the bronchial tree.

The obtained materials were fixed in 10% formalin and obtained by pouring paraffin. The incisions were 3–5 μm thick and stained with toluidine blue (0.1% pH-3.9). In this case, we obtained a ratio of 1: 1 between the dye and heparin. Morphometric analysis of fat cells was performed by Weibel's method.

For our study, infants under 3 years of age, ie newborns (1-10 days), infants (5-6 months), infants (10-12 months), early childhood (1-3 years) were taken to determine the causes of death and the underlying disease. studied in corpses without lung disease examined at the anatomical center.



The results of the study showed that the fat cells in children under 3 years of age are 10-12 microns, and with age they also grow and divide into large, medium and small fat cells. Fat cells, on the other hand, contain sector granules (SG).

Depending on the structure and composition of SGs, the studied fat cells are divided into 3 types:

In type 1, SG is dense and abundant, filling the cytoplasm.

In type 2, SG is relatively rare, large, and dense, with some degranulation.

In type 3, SG is mainly degranulated and a certain part is dense.

The different morphology of fat cells under natural physiological conditions affects their function asynchronously. [5,6]

Examination of the division of fat cells in the special layer in different types of large (head, segment), middle (segmental, subsegmentary) and small bronchi revealed the following.

In infants 1–10 days of age, their number was 15.7 ± 0.8; 17.1 ± 0.6; 12.9 ± 7.1; the number of fat cells in the large bronchi decreases, while in the small bronchi it increases, and there is no change in the middle bronchi. In later life, the number of fat cells increases in the large and middle bronchi.

If we observe the dynamics of changes in the bronchial mucosa of fat cells of different calibers, we can see the numbers in Table 1.

Table 1

Age of control	Large bronchus				Middle bronchus				Small bronchus				The total number of S H
	S H types			General	S H types			General	S H types			General	
	I	II	III		I	II	III		I	II	III		
1-10 day	0	85	9	94	0	79	19	98	0	60	10	70	262
5-6 monthly	0	43	10	53	0	72	15	87	0	62	13	75	215
1 up to year	0	50	11	61	0	68	12	80	1	66	18	86	226
1-3 age	0	54	12	66	2	70	20	92	3	65	26	94	252

If we pay attention, type 1 fat cells are less age-dependent, and at all ages, mostly type 2 fat cells disappear.

Thus, the study of changes in the number of fat cells in the postnatal period in the mucous membranes of the bronchial tree of the lungs shows that they have an effect on vital processes in the child's body. Further study of the ultrastructure of fat cells and the interaction of the mucous membrane in other organs with fat cells is of great importance.

Conclusion:

1. In the dynamics of age growth, the number and types of fat cells in the mucous membrane of the bronchial tree increased to 3 years.
2. At all ages, the main part of the fat cells of the mucous membranes of the large, medium and small bronchi are type 2 cells.
3. different types of fat cells in the mucous membranes of the small, medium and large bronchi are in an asynchronous state in postnatal ontogeny, and their functions have an optimal effect on the natural physiological vital processes.

References:

1. Basiy R.V, Vasilev V.A, Zdikhovskiy I.A, Dovgyallo Yu.V, Beshulya O.A, Selivanova E.S. Anatomy of the leg // Journal of Hygiene and Epidemiology Tom 22, № 4, 2018.
2. David Warburton. Overview of lung development in the newborn human. Neonatology. Author manuscript; available in PMC 2018 May 25.
3. Moldavskaya A.A, Gaziev M.A, Kalaev A.A, Petrov V.V. Morphogenesis and topographic-anatomical features of the lungs in prenatal human ontogeny. 2012g.
4. Haies D, Gill J, Weibel E.R. / Morphometric study of rat lung cells.//Amer. Rev. Resp. Dis. -1981. Vol-123.P-533-567.
5. Uspenskiy V.M. Funktsionalnaya morphology slizistoy obolochki jeludka, -L .: Nauka, 1986-320 st.
6. Eroxin V.V. Funktsionalnaya morphology respiratornogo otdela legkix.-M .: Meditsina, 1987.-272 st.