

FEATURES OF MAST CELLS OF HUMAN BRONCHIAL MUCOSA IN DYNAMIC OF POSTNATAL ONTOGENESIS

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ABSTRACT

The study of histological sections of bronchi of various calibers and different ages showed that the number and types of mast cells increase by adolescence and decrease by old age. In all age periods, the bulk of them is type II.

The study of histological sections of the bronchi of various sizes and of different ages showed that the number and types of mast cells grow into adolescence and decline to old age. The second type forms their main mass in all age periods.

KEYWORDS

It is known that the lung performs very important functions, including gas exchange, lipid metabolism, endocrine metabolism and metabolism of biologically active substances.

INTRODUCTION

The epithelium of the vessels of the lungs acts as a barrier. Residues of the enzymatic metabolism of ATF and ADF in the blood accumulate on the surface of the lung epithelium, as a result of which platelet aggregation decreases. One of the factors that ensure that blood does not clot in the veins of the human body is the cells that are considered to be the blood of heparin.[2,3]

According to the literature, it is known that fat cells are always changing their state, even several times a day; it differs from other cells in its individuality and variability with age [4].

Therefore, it is an urgent issue to study the structure of fat cells in the bronchial mucus layer at different densities.

Vital examinations revealed that the number of fat cells in the bronchial mucosa of a healthy person is 74.8-

87.2; and in bronchial asthma, it was found that it increases up to 135.6 (in 1mm² epithelium).

Morphometric analysis of fat cells in bronchial mucosa of different calibers was determined according to the description of D. P. Lindner in 1980 [3].

According to the purpose, histological sections were obtained from different parts of the bronchus (large, medium and small) and from cadavers of different ages after fixation in 10% formalin and embedding in paraffin.

Sections are 4-6 µm thick and stained in toluidine blue (0.1%, pH - 3.9). In this case, we calculated the ratio between dye and heparin. The morphometric analysis of fat cells was done by the Weibel method. Researches are conducted on people of different ages, i.e. newborns (1-10 days old), breastfeeding (11 days- up to 1 year old), early childhood (1-3 years old), first childhood period (4-7 years old), second childhood period (8 - up to 11 years), adolescence (12-16 years), young adulthood (17-21), maturity (22-55 years), old age (56-74), causes of death and main disease was studied in cadavers without lung and heart disease examined at the Department of Pathological Anatomy and Forensic Medicine.

From the results of the research, it became clear that the fat cells in children under 1 year are 10-12 µm, and with age, they also grow and divide into large, moderately small fat cells.

Fat cells also store sector granules (SG).

Based on the structure and composition of SGs, the studied fat cells are divided into type III: in type I, SGs are dense and abundant, filling the cytoplasm.

In type II, SGs are relatively less, large and densely located, and somewhat degranulated.

In type III, SG is mainly degranulated and a certain part is densely located. Different morphology of mast cells in natural physiological conditions affects their function asynchronously [5,6].

When examining the distribution of fat cells in the private plate, the following were found: in large (main lobe), medium (segments and subsegments) and small bronchi.

In 1-10-day-old babies, their number is 15.7+0.8; Up to 12.9 + 7.1 years of age, the number of fat cells in large bronchi decreases and increases by 22.6 from 7 to 16 years.

After the age of 16, the number of fat cells in the small bronchi decreases, and by the age of 75, their number is equal to 4.2+0.3, and in the large bronchi in the medium bronchus, it is equal to 25.3+4 (table).

If we observe the dynamics of the total number of fat cells of different calibers in bronchial walls at different ages, we can see the numbers as in the table.

Their number is not much until the teenage years, after the age of 36 it increases slightly (625).

Table

Dynamics of fat cells in the mucous layer of different caliber bronchi during postnatal ontogenesis

Текшириш ёшлари	Йирик бронх				Ўрта бронх				Майда бронх				С.Ҳ. умумий сон
	С.Ҳ.типлари			Жами	С.Ҳ.типлари			Жами	С.Ҳ.типлари			Жами	
	I	II	III		I	II	III		I	II	III		
1 - 10 кун	0	83	10	93	0	77	17	94	0	60	10	70	257
11 - 360 кун	0	33	11	44	0	70	12	82	0	72	11	83	209
1 - 3 ёш	0	53	18	71	2	70	20	92	3	65	28	96	259
4 - 7 ёш	1	82	38	121	2	68	52	122	2	34	54	90	333
8 - 12 ёш	1	78	36	115	2	88	20	110	1	43	20	64	289
13 - 16 ёш	20	220	62	302	12	108	46	166	7	94	56	157	625
17 - 21 ёш	10	156	71	227	7	105	48	160	11	63	29	103	420
22 - 35 ёш	5	193	23	221	2	107	28	137	1	112	24	137	495
36 - 56 ёш	8	83	43	134	2	92	28	120	2	65	24	91	345
57 - 75 ёш	3	71	55	135	2	45	41	88	0	26	23	49	272

Thus, the study of the postnatal increase in the number of mast cells in the bronchial tubes of the upper respiratory tract shows that they have an effect on the vital processes in the human body.

Later, it is very important to study the ultrastructure of fat cells and their cross-section with fat cells in other organs.

CONCLUSION

1. In the dynamics of age, the number and types of fat cells in the lining of the bronchi increase until adolescence.
2. Type II cells make up the majority of fat cells in the mucous membranes of large, medium and small bronchi at all ages.
3. 3 different types of fat cells in the mucous membranes of the small, large, and large bronchi are in an asynchronous state during postnatal ontogenesis, especially during puberty and maturity, and their functions have an optimal effect on the necessary natural physiological processes.

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