restriction of contacts (stigma of obesity), inertness and hypokinesia in the way of life (fast fatigue), experiences of distress from an image of a body and mental and behavioral disorders, in particular anxious and depressive [3].

It is supposed that overweight and obesity may be also connected with psychological and emotional problems [5]. Recently the idea that fatness could play an important role in the psychiatric nomenclature has been discussed. Researchers have shown high levels of fatness among people with disorders of food behavior, food excesses, unipolar depressive disorder and etc [7].

In a problem of the specified interrelation of depression and fatness, there is no unequivocal position. It is offered to divide all research works into three levels. Many researches in which frequencies of the general psychological functioning, concerning to depressions and anxiety in persons with excessive and normal weight were compared, did not often find certain distinctions in these two groups on psychological parameters. However, transcultural comparisons showed the expressed distinctions at these conditions and the negative relation to corpulent people. Tolerance of people with excess weight varies from resistance to negative estimations to their physical image and habitus to extreme degree of vulnerability. The second level of the approach suggests carrying out research which would begin with risk factor estimation model. This approach presumes to identify persons who suffer from their fatness in interrelation with features of psychological functioning. Thirdly, the following generation of researches is recommended. For these researches the establishment of pathophysiological mechanisms which would connect fatness with certain experiences of distress or mental disorder is offered [3]. However, there are several assumptions that fatness and problems of psychosocial and mental health are connected. Recent papers add evidence to previous work linking social network structures and obesity. Social capital and social stress are additional types of social influence [6].Our preliminary data has shown that depression with bulimia or with binge-eating, low self-esteem, difficulties in social adaptation were found out in 53,9% of women among 359 who sought for psychotherapy care [1].

In this direction the problem of studying of the depressive disorders prevalence in obesity also develops. Thus, the given researches and the authors' points of view can be various or complementary [2, 3, 8, 10].

Secondly, interventions directed to bodyweight decline may be included in complex treatment of psychiatric disorders taking to the account the frequency of depressive and bipolar disorders. In groups with various characteristics psychosocial problems, low level of social support, problems with mental health, low self-respect and the self-esteem, low level of average life duration, subthreshold depressive mood are marked [8].

Conclusion. Excess weight and obesity increase has epidemic character worldwide as non infectious condition. Craftiness of obesity is in its accruing comorbidity with depressive disorders that undoubtedly reduces quality of a life and obviously would essentially raise the mortality.

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MODERN APPROACHES TO AN ESTIMATION OF EFFICIENCY OF SUPERVISION OVER CHILDREN FROM RISK GROUPS ON TUBERCULOSIS DEVELOPMENT

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VI group supervision the account at phthisiatricians is formed by data tuberculins tests. Being based on the immunological data, the standard approach to supervision over it was effective in 20% of cases. At 20% of patients initial indicators of immune system at children at the moment of removal from the account remained. In 60% dynamics of immunological indicators isn'ted, but it hasn't led to homeostasis restoration in an organism. On the basis of the discriminant analysis of immunological variables objective criteria of prophylactic medical examination of children of VI group of risk on de-

velopment of a tuberculosis are developed. Depending on the received result it is offered to change approaches to prophylactic medical examination with application therapies immune preparations.

Children, having a bend tuberculins (tub) of tests or papule of 17 mm and more on tuberculin, concern risk group on development of a tuberculosis (TUB) and form VI group supervision («Д») the account. The basic criterion of their capture on the account and removals is change tub.sensitivity, tests Mantou defined according to test with 2 tubunits (TU). About «bend» tub.tests, transition before negative reactions in positive, increase tubsensitivity for a year on 6 mm and more testifies. During «D» supervision patients receive antitubercular preparations (ATP) in a combination with vitamins and preparations for liver improvement [1]. At removal from the account 2 figures (millimeters) received in the beginning and the end «D» of the period are compared. Reduction of the size of papules by 1 mm and more in aggregate with absence change under the roentgenogram of bodies of a thorax regard as good effect of prophylactic medical examination [2]. It is known that results of reaction of Mantou are influenced by an accompanying pathology, features of the food, transferred sharp infectious diseases, etc. Thus aren't excluded false results [2, 4]. Considering that test of Mantou is allergic reaction of IV type and defines not Mycobacteriae tuberculosis, and sensibilisitions to it T-limphocity [3], we found possible to study a condition of immune system (IS) and to offer objective criteria of prophylactic medical examination.

Research objective. To develop objective criteria in vitro for an estimation of efficiency of prophylactic medical examination

Materials and methods. On the basis of STPE TA «Regional antitubercular clinic» (Tyumen) in 2004-2008 is carried investigation of children at the age of 10-15 years at which at carrying out tubdiagnostics at planned medical inspections in educational institutions of Tyumen «bend» tubtests or reaction on tuberculins 17 mm is fixed. 2 groups on 86 patients, at the moment of a capture on the account (1st group) and after removal from the account in 12 months (2nd group) are generated. Control (3rd) group included children of corresponding age not ill infectious diseases within 6 months which do not have a chronic pathology and not reacting on tuberculin, (n = 15). To all patients it is spent radiological and tomographics inspection for exception TUB. During time «D» supervision to all children reception **PTP** (an isoniazid – 5-7 mg/kg or an isoniazid-5-7 of mg/kg + pirazinamid-20 of mg/kg) is appointed within 3-months. Recommendations of the doctor are executed in 76,7 % (66 patients) that is designated by a letter «A». Didn't accept ATP 23,3 % (20 patients) – letters «B».

Immunological inspection is spent to 10 children before appointment ATP in 1A to group, after removal from the account (2A group). B a research course are defined formulas blood, immune kind lymphocytes (Lymph) on cytophlyuorimetrs (FACScan) by means of monoclonal antibodies (the LTD. Sorbent, Moscow) to molecules $CD3^+$, $CD4^+$, $CD8^+$, $CD20^+$, $CD16^+$, to differens antigenes ($CD5^+$, $CD7^+$), to activation markers ($CD25^+$, $HLA\text{-}DR^+$) and adhesions ($CD54^+$), to apoptosis molecules ($CD95^+$), to receptors to IgE ($CD23^+$), on membranes of monocytes ($CD14^+$). Defined concentration IgA, IgM, IgG (on Manchini) and the general IgE (in reaction IFA). A method **precipitation** defined level of circulating immune complexes (the CIC of 3,5; 5 and 7,5 %). Functional condition phagocytosis cages estimated by definition of their absorbing ability with latex particles (PHC), and also biocidal activity of phagocytes (in spontaneous and stimulations the test of restoration nitrodark blue tetrzolium – NDT) and completeness degrees phagocytosis (CDPH). Studying interleykins IL-1 β, IL-2, IL-4, IFN – γ spent method IFA. Statistical processing of results carried out by means of the software package (SPSS Inc.) for basic researches.

Results and discussion. In group 1A decrease in results of reaction of Mantou is revealed in 39,4 % (26 people), increase in 25,8 % (17 people) and absence of any dynamics in 34,8 % (23 people of the people). In 1Б to group papule decrease took place – 40 % (8 people), increase of 20 % (4 people) and absence in dynamics tubsensitivity – 40 % (8 people). It is established that dynamics tubtests didn't depend on reception ATP. Reaction of Mantou was the functional test reflecting condition IS during the given period «D» of the account.

During the discriminant analysis from 37 analyzed indicators in the beginning and the end of prophylactic medical examination at the patients who have received ATP, it is chosen only seven (table). According to the one-factorial analysis authentic distinctions are fixed among indicators of the general level of Lymph (p = 0,005), Lymph with receptors $CD7^+$ (p = 0,002) and CD95+ (p = 0,007), concentration IgE (p = 0,038), IL-2 (p = 0,025). The maintenance of a cortisol and absolute indicators neutrophils didn't differ between groups.

In comparison with control group patients 1A groups had low level $CD95^+$ a receptor on Lf (p = 0,007), and at children 2A groups decrease in an expression of receptor $CD7^+$ on Lymph is fixed. This receptor was costimulating for IL-2 and its receptor ($CD25^+$). I.e., after reception ATP, operating on Mycobacteriae tuberculosis the factor, activation IS didn't come.

It is known [5, 6] that at a tubercular infection development Th2 of a way of the immune answer is possible. Indirect criterion of it was indicator IgE. Concentration IgE in 1A to group authentically above, than in 3 group whereas in 2A to group it was noticed a tendency to decrease that testified to decrease in activity Th2 of a way as a result therapies which were ATP. Thus, level IgE completely

wasn't restored to values in 3 group. Cortisol production influenced not only activator presence, but also duration of infectious loading. Concentration of a cortisol increased eventually from the moment of a capture by the account and after carrying out of preventive course ATP. We regarded this fact as result of adverse events for an organism: activator introduction (MBT), reception ATP and, as consequence of it, infringement of a homeostasis which took place in a current of long time (to 12 month).

At patients with changed tuberculins sensitivity at the initial stages «D» supervision are found out level increase neutrophils, Lymph and decrease in cages, expressions molecules ($CD7^+$) at hypoproduction IL-2 and hyperproduction IgE. Difference between groups in the beginning and the prophylactic medical examination end was high level of a cortisol at patients at removal from the account. The chosen indicators reflected links immune patogenesis a tubercular infection.

Statistical data of variable patients in groups with change tuberculins sensitivity

Changes	Group of patients	*N*	Average value of an indicator	A deviation of Std	An error of Std	Of 95% a confidential interval for average		Minimum	Maximum
						The bottom border	The top border		
Neutr, abs	1A groups	10	2889,4	1189,9	376,3	2038,2	3740,6	1300	4620,2
	2A groups	10	2488,1	607,2	192,0	2053,7	2922,5	1680	3337,0
	3-я groups	15	2579,1	705,5	182,0	2188,4	2969,8	1287	3600,0
	Total	35	2641,8	839,1	141,8	2353,5	2930,0	1287	4620,0
Lymph, %	1A groups	10	45,2	16,8	5,3	33,2	57,2	23,0	77,0
	2A groups	10	41,7	8,8	2,8	35,4	48,0	24,0	54,0
	3-я groups	15	42,9	5,9	1,5	39,6	46,1	33,0	49,0
	Total	35	43,2	10,6	1,8	39,6	46,8	23,0	77,0
$CD7^+$	1A groups	10	76,8	3,3	1,0	74,4	79,2	73,0	82,4
	2A groups	10	73,8	4,8	1,5	70,4	77,3	67,8	80,8
	3-я groups	15	80,0	4,0	1,0	77,8	82,3	72,2	85,3
	Total	35	77,3	4,8	0,8	75,7	79,0	67,8	85,3
$CD95^+$	1A groups	10	39,5	9,4	3,0	32,7	46,3	16,9	50,1
	2BA groups	10	43,8	7,9	2,5	38,2	49,5	32,5	54,0
	3-я groups	15	50,9	8,2	2,1	46,3	55,4	33,3	63,6
	Total	35	45,6	9,6	1,6	42,3	48,9	16,9	63,6
Ig E	1A groups	10	165,6	192,7	60,9	27,8	303,5	7,6	496,2
	2A groups	10	115,8	111,6	35,3	36,0	195,6	3,1	367,0
	3-я groups	15	38,1	22,6	5,8	25,6	50,6	6,9	102,1
	Total	35	96,7	127,9	21,6	52,8	140,7	3,1	496,2
Kortizols	1A groups	10	387,7	103,0	32,6	314,0	461,3	256,3	596,0
	2A groups	10	447,1	123,2	39,0	359,0	535,2	318,7	599,2
	3-я groups	15	384,6	92,3	23,8	333,5	435,7	265,7	524,0
	Total	35	403,3	105,5	17,8	367,1	439,5	256,3	599,2
IL-2	1A groups	10	98,7	128,6	40,7	6,7	190,6	0,0	342,2
	2A groups	10	38,3	48,7	15,4	3,5	73,2	0,0	114,5
	3-я groups	15	167,8	268,2	69,2	19,3	316,3	0,9	1000,0
	Total	35	110,0	194,0	32,8	44,4	177,7	0,0	1000,0

Considering that all received variables had various units of measure and have been non-comparable among themselves, we have transformed their true values in good, proceeding from a general average of set and a standard deviation. Each variable didn't possess authentic values. About efficiency of reception ATP we have received exact enough forecast on the basis of the further carrying out of the discriminantions analysis when separate indicators, and their set were estimated not. Definition of initial discriminantions functions (IDF) has allowed to formulate the formulas, allowing to define an accessory of the patient to this or that group. On the basis of IDF it is revealed that under the immunological data among patients with indicators, characteristic for the period after reception ATP (2A group – 60%), were persons, with the data peculiar 1A to group (20%) and 3 (20%). In 91,4% initially generated groups are classified correctly, and at cross-country-checked research – 74,3%. Desirable effect of prophylactic medical examination was definition of children 2A groups in 3rd group on immunological positions at removal from the account that testified to homeostasis restoration. Unfortunately it we have reached only at 2 of 10 patients, and 6 from 10 needed term increase «D» the account since dy-

namics of restoration of immune system was outlined, but has not been completely reached.

The conclusion. By data tubtests with 2 TU us it is noted authentic distinctions in dynamics of the sizes of a papule at patients 1A and 1B groups. Application of reaction of Mantou as criterion of efficiency «D» the account didn't reflect a full picture of interaction macro and a microorganism. It was the functional test and a marker of immune dysfunctions. Because results tubdiagnostics are defined by two versatile indicators: a condition **infected** and an immunoreactivity condition, they should be read in aggregate with indicators **IC**. Among the immunological indicators distinguishing groups among themselves, low level of Lymph with receptor $CD7^+$ at patients 1A groups and decrease in Lymph, exprecing molecules $CD95^+$ isn'ted at removal from the account. IDF can be the objective test for an estimation of efficiency of application ATP. Proceeding from the aforesaid, the papule on 2 TU PPD-L can't be the only thing and (or) the basic criterion of diagnostics of a latent tuberculosis and efficiency of preventive actions. Alternative tubdiagnostics for an estimation of efficiency of application ATP can be IDF as the objective test which is carried out in vitro.

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LEAN-TECHNOLOGY APPLICATION IN DIAGNOSTIC PROCESS

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The pace of modern medicine development demands the innovational ways of diagnostics and treatment. A new type of relations between a doctor and a patient is developing and a patient gets an opportunity to choose his special doctor and the diagnostic method too. However, it leads to inefficient use of time and financial resources: the load on the diagnostic department and a specialist doctor increases, the patient's way to a correct diagnosis and treatment lengthens. Modern diagnostic department is a high-technology equipment and complicated diagnostic methods. It's necessary to take clinical aspects of the disease into consideration and to be aware of various opportunities of laboratory and instrumental examination methods, to be able to interpret the data. The doctor-consult of the diagnostic department possesses this knowledge.

A system that allows to remove «pain points» of the diagnostic process was designed, it is based on applying the principles of lean production – logistics concept work that involves improving internal processes while enhancing customer and staff satisfaction.

At the first visit of the patient the consultant physician of the diagnostic department makes a plan and a timetable for the survey on the basis of complaints, anamnesis and objective examination and helps the patient to realize it as soon as possible. According to the data of examination the need of any specialist doctors is determined. Thus the diagnostic department staff is free from performing extra procedures and a specialist doctor consults an examined patient. The system allows the patient to pass all the diagnostical procedures he needs and to get the conclusion of his clinical diagnosis and recommendations about treatment in short term and to avoid spending long time, extra physical and financial resources.

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