UDC 616.895.8:616.89-008.441.44-001.1-079.4

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DIFFERENTIAL DIAGNOSTICS OF SCHIZOPHRENIA AND ACUTE STRESS REACTION IN PATIENTS WITH SUICIDAL BEHAVIOR

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ДИФЕРЕНЦІАЛЬНА ДІАГНОСТИКА ШИЗОФРЕНІЇ ТА ГОСТРОЇ РЕАКЦІЇ НА СТРЕС У ХВОРИХ ІЗ СУИЦИДАЛЬНОЮ ПОВЕДІНКОЮ

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ДИФФЕРЕНЦИАЛЬНАЯ ДИАГНОСТИКА ШИЗОФРЕНИИ И ОСТРОЙ РЕАКЦИИ НА СТРЕСС У БОЛЬНЫХ С СУИЦИДАЛЬНЫМ ПОВЕДЕНИЕМ

The purpose of this work was an elaboration of algorithm of differential diagnostics of schizophrenia and acute reaction on stress in patients who have made suicide attempts, based on results of complex analysis anamnestic data and characteristics of actual status of this category of patients.

Research was carried out in two groups of comparison: among patients with schizophrenia (group No. 1 — 77 persons) and among patients with acute reaction on stress (group No. 2 — 51 persons).

Following methods of research were applied in this work: socially-demographic, clinical-psychopathological, psychodiagnostic, genealogical, genetic analysis (with an estimation of dominant and recessive signs), paraclinical (holographic interferential microscopy of erythrocytes and estimation of level of the general cholesterol in blood serum), and also the mathematical statistics (the dispersive analysis, calculation of diagnostic quotients and measures of informativity of signs with the subsequent application of Wald procedure).

The most informative markers of differential diagnostics of schizophrenia and acute reaction on stress in patients with suicide behavior are revealed. It is shown that use of the given markers as a part of consecutive procedure of Wald provides a faultlessness of differential diagnostics of the specified conditions at level of 99.22 %.

Keywords: suicide behavior, schizophrenia, acute reaction on stress, differential diagnostics.

Метою роботи було розроблення алгоритму диференціальної діагностики шизофренії та гострої реакції на стрес у хворих, що скоїли суїцидальні спроби, на підставі результатів комплексного аналізу анамнестичних даних та характеристик актуального статусу цієї категорії пацієнтів.

Дослідження здійснювали у двох групах порівняння: серед хворих на шизофренію (група № 1 — 77 осіб) і серед хворих з гострою реакцією на стрес (група № 2 — 51 особа).

У роботі застосовували такі методи дослідження: соціально-демографічний, клініко-психопатологічний, психодіагностичний, генеалогічний, генетичного аналізу (з оцінкою співвідношення домінантних та рецесивних ознак), параклінічний (голографічна інтерференційна мікроскопія еритроцитів та оцінка рівня вмісту загального холестерину в сироватці крові), а також математичної статистики (дисперсійний аналіз, розрахунки діагностичних коефіцієнтів та мір інформативності ознак з наступним застосуванням процедури Вальда).

Виявлено найбільш інформативні маркери диференціальної діагностики шизофренії та гострої реакції на стрес у хворих із суїцидальною поведінкою. Показано, що використання цих маркерів у складі послідовної процедури Вальда забезпечує безпомилковість диференціальної діагностики зазначених станів на рівні 99,22 %.

Ключові слова: суїцидальна поведінка, шизофренія, гостра реакція на стрес, диференціальна діагностика.

Целью работы была разработка алгоритма дифференциальной диагностики шизофрении и острой реакции на стресс у больных, совершивших суицидальные попытки, на основании результатов комплексного анализа анамнестических данных и характеристик актуального статуса этой категории пациентов.

Исследование осуществляли в двух группах сравнения: среди больных шизофренией (группа № 1 — 77 человек) и среди больных с острой реакцией на стресс (группа № 2 — 51 человек).

В работе применяли следующие методы исследования: социально-демографический, клинико-психопатологический, психодиагностический, генеалогический, генетического анализа (с оценкой соотношения доминантных и рецессивных признаков), параклинический (голографическая интерференционная микроскопия эритроцитов и оценка уровня содержания общего холестерина в сыворотке крови), а также математической статистики (дисперсионный анализ, расчет диагностических коэффициентов и мер информативности признаков с последующим применением процедуры Вальда).

Выявлены наиболее информативные маркеры дифференциальной диагностики шизофрении и острой реакции на стресс у больных с суицидальным поведением. Показано, что использование данных маркеров в составе последовательной процедуры Вальда обеспечивает безошибочность дифференциальной диагностики указанных состояний на уровне 99,22 %.

Ключевые слова: суицидальное поведение, шизофрения, острая реакция на стресс, дифференциальная диагностика.

Suicidal behavior is one of the most challenging world problems. Annually, over 500 thousand of committed suicides are registered in the world. Suicide is a pressing challenge for Ukraine as well. The World Health Organization defines suicide situation in our country as unfavorable.

According to the latest official statistics, the frequency of committed suicides in Ukraine is 19.9 cases per 100 thousand of population [1—6]. In fact, depressions combined with psychotic disorders (primarily, in schizophrenic patients), as well as acute reaction to severe stress [7] constitute the key factor of suicide.

In the available special literature there have been countless discussions about employment of dissimilar circumstances to improve accuracy of differential diagnostics of mental and behavioral disorders (MBD), which led to the formation of suicidal activity. However, an algorithm suitable for practical use of such circumstances has not been established yet.

This is **the reason why the study objective** is to develop an algorithm of differential diagnostics of schizophrenia and acute stress reactions in patients committed the suicide attempts based on the results of comprehensive analysis of anamnestic data and characteristics of the current status of these patients.

Over 2003—2005, the cohort of 128 patients aged from 20 to 66 years old, committed incomplete suicide attempts and undergoing inpatient treatment in connection with this in the Regional Clinical Psychiatric Hospital No. 1 (village Strileche, Kharkiv region), was examined.

The cohort was represented by two experimental groups. The Group No. 1 numbered 77 people (31 men and 46 women) diagnosed with schizophrenia (diagnosis code F20 according to ICD-10), and the Group No. 2 numbered 51 people (27 men and 24 women) diagnosed with acute stress reaction (diagnosis code F43 according to ICD-10).

The following study methods were deployed to achieve the stated objective: social and demographic, clinical and psychopathological, psychognostic, genealogical and genetic analysis (with determination of dominant/recessive traits), paraclinic (holographic interference microscopy of erythrocytes and determination of total cholesterol concentration in blood serum), as well as mathematical statistics.

Social and demographic method was used to describe age, sex, place of residence, education, as well as professional and family status of the patients.

Clinical and psychopathological method was based on generally accepted approaches to the psychiatric examination and observation. However, available mental and behavioral disorders were identified in accordance with the criteria outlined in the International Classification of Diseases, Tenth Revision (ICD-10) [8].

Genealogical method (implemented through the Murphy Chase technique aimed at questioning of the patients' mothers [9]) was employed to determine hereditary burden of MBD probands.

Psychognostic method was used to study qualitative and quantitative characteristics of mental status and made provision for deployment of the following techniques:

— Patocharacterological Diagnostic Questionnaire (PQD) by Lichko — Ivanov [10];

— Minnesota Multiphasic Personality Inventory (MMPI) [11];

— Wechsler Intelligence Scale [12].

Physiognomic and dermatoglyphic characteristics were analyzed by reference to A. A. Aleksandrov (2006) to determine the balance of dominant and recessive traits available during ordinary external examination [13].

Holographic interference microscopy method was employed to study morphological characteristics of erythrocytes. However, 3D images of the referred microscopic objects (erythrocytes) were created. He-Ne gas laser with emission wavelength of 0.63 microns was used as a radiation source for creation of holograms. Interference patterns were recorded by digital camera with resolution of 8 megapixels with subsequent 3D imaging of erythrocytes using personal computer [14, 15].

Total cholesterol concentration in blood was determined by the Ilka method [16]. The need to determine this value was defined by the reported data on hypocholesterolemia among the individuals committed suicide attempts.

Obtained data were processed using mathematical statistics methods (analysis of variance [ANOVA]) on PC with SPSS and Excel software (Microsoft Office 2003 package) [20].

An additional point is that comprehensive information on heterogeneous markers of suicidal behavior in patients with schizophrenia and acute stress reaction obtained using above described study methods required consolidation and submission in the form that provides for comparison and integrated reporting. For this purpose, we used the Wald's test (modified by Ye. V. Gubler), which provides for calculation of diagnostic coefficients (DC) and informativity measures (IM) for each available trait [21]. To obtain correct values of DC and IM for quantitative traits the boundary between their ranges was determined so that the difference between the relevant distributions of experimental groups was maximum. Moreover, only those traits, the difference in frequency of which in experimental groups was significant, were used as markers of differential diagnostics; however, *DC* and *IM* were calculated according to the formulas [21]:

$$DC(xij) = 10\lg\frac{P(xij/A_1)}{P(xij/A_2)} \quad (1)$$

$$J(xij) = 10\lg\frac{P(xij/A_1)}{P(xij/A_2)} \cdot 0,5[P(xij/A_1) - P(xij/A_2), \quad (2)$$

where: DC is a diagnostic coefficient;

$J(xij)$ is a Kulbak informativity measure;

$P(xij/A_1)$ is a trait frequency in the first experimental group;

$P(xij/A_2)$ is a trait frequency in the second experimental group.

The essence of the Wald's test is to compare DC calculated for each trait with the relevant value of the desired differentiation confidence level [21].

For instance, differentiation confidence at the level of $p < 0.05$ corresponds to the value of DC (Σ_{DC}) > 13 units (in modulus, as DCs can take both positive and negative values; this will be discussed in more details below) at the level of $p < 0.01$ — $\Sigma_{DC} > 20$ units, and at the level of $p < 0.001$ — $\Sigma_{DC} > 30$ units. Thus, each trait can be either sustainable for reliable differential diagnostics (if this trait has DC > 13, 20 or 30 for $p < 0.05$, $p < 0.01$ and $p < 0.001$, respectively) or such that provides for the required differentiation confidence only in combination with other elements (if it has DC < 13, 20 or 30, respectively). In the latter case, DCs of different traits are added to each other (in the order of their informativity descending) until the desired differentiation confidence level will be reached. When calculating DCs, their sign (positive or negative) depends only on relationship of the number of patients having the relevant traits in the experimental groups and on the group, to which the studier assigned No. 1 or No. 2.

In this very study, when solving a problem related to the differentiation of schizophrenia (Group No. 1) and acute stress reaction (Group No. 2), utilization of the formula 1 for DC calculation results in the fact that markers of acute stress reaction diagnosis have positive DCs and markers of schizophrenia diagnosis have negative DCs.

Before describing the study results, it should be emphasized that, for reasons of economy, only those of analyzed traits, the frequency of which differed significantly in the experimental groups and therefore could be used as differential and diagnostic markers, were represented in this paper.

The analysis of social and demographic part of the study showed that markers of schizophrenia diagnosis are as follows: young age (≤ 19 years old) at the time of disease manifesto (it is quite consistent with classical description of the disease), absence of life partner (this is a demonstration of typical problems in the interpersonal communication peculiar to the patients of this category), and, reasonably expected in this particular case, disability usually connected with mental illness (Table 1).

Thus, markers of acute stress reaction diagnosis were as follows: age of disease onset > 45 years old, marital status "married", as well as absence of disability (Table 1).

The analysis of clinical and psychopathological data of the study showed that markers of schizophrenia diagnosis are as follows (in the order of their informativity descending): anatomic thought disorders, persecution delusions, paracusia, diversity of interests (with typical detachment from reality), and, finally, insomnia, which represent pathognomonic traits of endogenous process, as well as commitment of suicide attempts in autumn. Thus, informative markers of acute stress reaction diagnosis were as follows: absence of anatomic thought disorders, persecution delusions, paracusia, diversity of interests (with typical detachment from reality), and, finally, insomnia, as well as the following circumstances of suicide attempt commitment, such as, in summer, on a monthly basis (in May, July), on Tuesdays and Sundays, methods of suicide attempt commitment — combined and drug poisoning (Table 1).

The analysis of psychognostic method data demonstrated that the most informative markers of schizophrenia diagnosis are as follows: peaks on MMPI scales — personality scale at admission to the hospital and at dismissal from it, availability of any personality accentuation in premorbid, in general, as well as schizoid and psychasthenic accentuation and, in particular, mental deficiency. Thus, markers of acute stress reaction diagnosis were as follows: peaks on MMPI scales — scale of pessimism, anxiety, interests, hysteria at admission, optimism, anxiety at dismissal, absence of personality accentuation in premorbid and mental deficiency (Table 1).

The analysis of genealogical method data showed that markers of schizophrenia diagnosis are as follows: hereditary burden with MBD, in general, and with schizophrenia in particular that ties up with available information on role of hereditary burden in schizophrenia formation. Thus, markers of acute stress reaction diagnosis were as follows: absence of hereditary burden with MBD as schizophrenia and other MBD (Table 1). The analysis of phenotype study data demonstrated that marker of schizophrenia diagnosis is a dominance (> 50 %) of recessive physiognomic and dermatoglyphic traits in the phenotype, and marker of acute stress reaction diagnosis is a prevalence (> 50 %) of dominant physiognomic and dermatoglyphic traits in the phenotype (Table 1).

Table 1

Calculation of diagnostic coefficients (DC) and informativity measures (IM) of studied traits as markers of differential diagnostics of schizophrenia and acute stress reaction among the individuals committed suicide attempts

Markers				Trait frequency (individuals)		Difference confidence (*p*)	Trait frequency (c. u.)		Frequency ratio (No. 1/ No. 2)	DC	IM
				Group No. 1	Group No. 2		Group No. 1	Group No. 2			
Social and demographic											
Age of disease onset:			≤ 19 years old	19	5	0,01976	0,2468	0,0980	0,40	–4,01	0,30
			≥ 45 years old	1	8	0,00257	0,0130	0,1569	12,08	10,82	0,78
Marital status:			single	33	13	0,02032	0,4286	0,2549	0,59	–2,26	0,20
			married	23	25	0,01390	0,2987	0,4902	1,64	2,15	0,21
Disability:			yes	39	1	< 0,00001	0,5065	0,0196	0,04	–14,12	3,44
			no	38	50	< 0,00001	0,4935	0,9804	1,99	2,98	0,73
Clinical and psychopathological											
Anatomic thought disorders:			yes	76	1	< 0,00001	0,9870	0,0196	0,02	–17,02	8,23
			no	1	50	< 0,00001	0,0130	0,9804	75,49	18,78	9,08
Delusions (persecution):			yes	45	1	< 0,00001	0,5844	0,0196	0,03	–14,74	4,16
			no	32	50	< 0,00001	0,4156	0,9804	2,36	3,73	1,05
Paracusia:			yes	39	1	< 0,00001	0,5065	0,0196	0,04	–14,12	3,44
			no	38	50	< 0,00001	0,4935	0,9804	1,99	2,98	0,73
Diversity of interests (their detachment from reality):			yes	31	1	< 0,00001	0,4026	0,0196	0,05	–13,12	2,51
			no	46	50	< 0,00001	0,5974	0,9804	1,64	2,15	0,41
Insomnia:			yes	62	23	0,00003	0,8052	0,4510	0,56	–2,52	0,45
			no	15	28	< 0,00001	0,1948	0,5490	2,82	4,50	0,80
Circumstances of suicidal attempt commitment	Period of attempt commitment:	season:	summer	13	21	0,00175	0,1688	0,4118	2,44	3,87	0,47
			autumn	26	8	0,01230	0,3377	0,1569	0,46	–3,33	0,30
		month of year:	May	3	7	0,03733	0,0390	0,1373	3,52	5,47	0,27
			July	2	8	0,00821	0,0260	0,1569	6,04	7,81	0,51
		day of week:	Tuesday	6	11	0,01836	0,0779	0,2157	2,77	4,42	0,30
			Sunday	12	14	0,04777	0,1558	0,2745	1,76	2,46	0,15
	Method of attempt commitment:		combined	1	5	0,03335	0,0130	0,0980	7,55	8,78	0,37
			drug poisoning	4	8	0,03632	0,0519	0,1569	3,02	4,80	0,25

Table 1 (continued)

Markers			Trait frequency (individuals)		Difference confidence (*p*)	Trait frequency (c. u.)		Frequency ratio (No. 1/ No. 2)	DC	IM
			Group No. 1	Group No. 2		Group No. 1	Group No. 2			
Physiognomic and dermatoglyphic										
Percentage of recessive (physiognomic and dermatoglyphic) traits in phenotype:		> 50 %	60	13	< 0,00001	0,7792	0,2549	0,33	–4,85	1,27
		≤ 50 %	17	38	< 0,00001	0,2208	0,7451	3,37	5,28	1,38
Genealogical										
Hereditary burden with MBD:		yes (schizophrenia)	11	1	0.01436	0.1429	0.0196	0.14	–8.62	0.53
		no (schizophrenia)	66	50	0.01436	0.8571	0.9804	1.14	0.58	0.04
		yes (any MBD)	28	7	0.00281	0.3636	0.1373	0.38	–4.23	0.48
		no (any MBD)	49	44	0.00281	0.6364	0.8627	1.36	1.32	0.15
Psychognostic										
Rating by MMPI scales:	at admission to hospital:	pessimism: > 70 points	8	34	< 0.00001	0.1039	0.6667	6.42	8.07	2.27
		pessimism: ≤ 70 points	69	17	< 0.00001	0.8961	0.3333	0.37	–4.29	1.21
		anxiety: > 70 points	9	33	< 0.00001	0.1169	0.6471	5.54	7.43	1.97
		anxiety: ≤ 70 points	68	18	< 0.00001	0.8831	0.3529	0.40	–3.98	1.06
		interest: > 70 points	2	13	0.00011	0.0260	0.2549	9.81	9.92	1.14
		interest: ≤70 points	75	38	0.00011	0.9740	0.7451	0.76	–1.16	0.13
		hysteria: > 70 points	9	12	0.04162	0.1169	0.2353	2.01	3.04	0.18
		hysteria: ≤ 70 points	68	39	0.04162	0.8831	0.7647	0.87	–0.63	0.04
		individualism: > 70 points	69	2	< 0.00001	0.8961	0.0392	0.04	–13.59	5,82
		individualism: ≤ 70 points	8	49	< 0.00001	0.1039	0.9608	9.25	9.66	4.14
	at dismissal from hospital:	optimism: > 70 points	2	8	0.00821	0.0260	0.1569	6.04	7.81	0.51
		optimism: ≤ 70 points	75	43	0.00821	0.9740	0.8431	0.87	–0.63	0.04
		anxiety: > 70 points	4	8	0.03632	0.0519	0.1569	3.02	4.80	0.25
		anxiety: ≤ 70 points	73	43	0.03632	0.9481	0.8431	0.89	–0.51	0.03
		individualism: > 70 points	14	2	0.01147	0.1818	0.0392	0.22	–6.66	0.47
		individualism: ≤ 70 points	63	49	0.01147	0.8182	0.9608	1.17	0.70	0,05
Accentuation (by Lichko — Ivanov):		yes (any)	56	13	< 0.00001	0.7273	0.2549	0.35	–4.55	1.08
		no (any)	21	38	< 0.00001	0.2727	0.7451	2.73	4.36	1,03
		yes (schizoid)	20	2	0.00063	0.2597	0.0392	0.15	–8.21	0.91
		no (schizoid)	57	49	0.00063	0.7403	0.9608	1.30	1.13	0.12
		yes (psychasthenic)	22	6	0.01352	0.2857	0.1176	0.41	–3.85	0.32
		no (psychasthenic)	55	45	0.01352	0.7143	0.8824	1.24	0.92	0.08
Mental deficiency (< 70 points by Wechsler):		yes	70	1	< 0.00001	0.9091	0.0196	0.02	–16.66	7.41
		no	7	50	< 0.00001	0.0909	0.9804	10.78	10.33	4.59
Biochemical										
Blood cholesterol:	hypocholesterolemia (< 3 mmol/L)		55	5	< 0.00001	0.7143	0.0980	0.14	–8.62	2.66
	no hypocholesterolemia (≥ 3 mmol/L)		22	46	< 0.00001	0.2857	0.9020	3.16	4.99	1.54
Morphology of erythrocytes										
Erythrocyte deformation:		yes	76	23	< 0.00001	0.9870	0.4510	0.46	–3.40	0.91
		no	1	28	< 0.00001	0.0130	0.5490	42.27	16.26	4.36

The analysis of biochemical study data showed that marker of schizophrenia diagnosis is a hypocholesterolemia, and marker of acute stress reaction diagnosis is its absence (Table 1).

The analysis of erythrocyte morphological study data showed that marker of schizophrenia diagnosis is an erythrocyte deformation, and marker of acute stress response diagnosis is its absence (Table 1).

The obtained markers of differential diagnostics of conditions "Acute Stress Reaction" and "Schizophrenia" among the individuals, who committed suicide attempts, were summarized in differential and diagnostic tables (Tables 2 and 3) for further use in the Wald's test.

Table 2

Table of differential diagnostics of acute stress reactions and schizophrenia in persons committed suicide attempts.
Markers of acute stress response diagnosis

Markers	DC	IM
Anatomic thought disorders: no	18.78	9.08
Mental deficiency (< 70 points by Wechsler): no	10.33	4.59
Erythrocyte deformation: no	16.26	4.36
MMPI personality scale (at admission): ≤ 70 points	9.66	4.14
MMPI pessimism scale (at admission): > 70 points	8.07	2.27
MMPI anxiety scale (at admission): > 70 points	7.43	1.97
Blood cholesterol level: no hypocholesterolemia (≥ 3 mmol/L)	4.99	1.54
Percentage of recessive (physiognomic and dermatoglyphic) traits in phenotype: ≤ 50 %	5.28	1.38
MMPI interest scale (at admission): > 70 points	9.92	1.14
Delusions (persecution): no	3.73	1.05
Accentuations in premorbid: no (any)	4.36	1.03
Insomnia: no	4.50	0.80
Age of disease onset: ≥ 45 years old	10.82	0.78
Paracusia: no	2.98	0.73
Disability: no	2.98	0.73
Attempt seasonality (current month of year): July	7.81	0.51
MMPI optimism scale (at dismissal): > 70 points	7.81	0.51
Attempt seasonality: summer	3.87	0.47
Diversity of interests (their detachment from reality): no	2.15	0.41
Methods of attempt commitment: combined	8.78	0.37
Day of week for attempt (current): Tuesday	4.42	0.30
Attempt seasonality (current month of year): May	5.47	0.27
Methods of attempt commitment: drug poisoning	4.80	0.25
MMPI anxiety scale (at dismissal): > 70 points	4.80	0.25
Marital status: married	2.15	0.21
MMPI hysteria scale (at admission): > 70 points	3.04	0.18
Day of week for attempt (current): Sunday	2.46	0.15
Hereditary burden with MBD: no (any MBD)	1.32	0.15
Accentuations in premorbid: no (schizoid)	1.13	0.12
Accentuations in premorbid: no (psychasthenic)	0.92	0.08
MMPI personality scale (at dismissal): ≤ 70 points	0.70	0.05
Hereditary burden with MBD: no (schizophrenia)	0.58	0.04

As it follows from Table 2, the most informative markers of acute stress reaction diagnosis are as follows: absence of anatomic thought disorders, mental deficiency (< 70 points by Wechsler) and erythrocyte deformation. Then (in the order of informativity descending), relatively low (≤ 70 points) values (at admission) by MMPI personality scale and relatively high (> 70 points) values by pessimism and anxiety scales follow.

Informative markers of acute stress reaction diagnosis also include absence of hypocholesterolemia (≥ 3 mmol/L); relatively low (≤ 50 %) recessive (physiognomic and dermatoglyphic) traits in the phenotype; relatively high (> 70 points) values by interest scale (at admission); absence of delusions (persecution) and accentuations of personality traits in premorbid. Other traits indicated in Table 2 shall be recognized as relatively less informative (IM < 1). As it follows from Table 3, the most informative markers of schizophrenia diagnosis are as follows: anatomic thought disorders, mental deficiency (< 70 points by Wechsler), relatively high (> 70 points) values by MMPI personality scale (at admission), as also delusions (persecution), paracusia and disability (in terms of mental disease). Then (in the order of informativity descending), hypocholesterolemia (< 3 mmol/L), diversity of interests (their detachment from reality); relatively high (> 50 %) recessive (physiognomic and dermatoglyphic) traits in the phenotype; relatively low (≤ 70 points) values by MMPI pessimism and anxiety scale (at admission) and accentuations of personality traits in premorbid. Other traits indicated Table 3 shall be recognized as relatively less informative (IM < 1).

Table 3

Table of differential diagnostics of acute stress reactions and schizophrenia in persons committed suicide attempts.
Markers of schizophrenia diagnosis

Markers	DC	IM
Anatomic thought disorders: yes	–17.02	8.23
Mental deficiency (< 70 points by Wechsler): yes	–16.66	7.41
MMPI personality scale (at admission): > 70 points	–13.59	5.82
Delusions (persecution): yes	–14.74	4.16
Paracusia: yes	–14.12	3.44
Disability: yes	–14.12	3.44
Blood cholesterol level: hypocholesterolemia (< 3 mmol/L)	–8.62	2.66
Diversity of interests (their detachment from reality): yes	–13.12	2.51
Percentage of recessive (physiognomic and dermatoglyphic) traits in phenotype: > 50 %	–4.85	1.27
MMPI pessimism scale (at admission): ≤ 70 points	–4.29	1.21
Accentuations in premorbid: yes (any)	–4.55	1.08
MMPI anxiety scale (at admission): ≤ 70 points	–3.98	1.06
Erythrocyte deformation: yes	–3.46	0.95
Accentuations in premorbid: yes (schizoid)	–8.21	0.91
Hereditary burden with MBD: yes (schizophrenia)	–8.62	0.53
Hereditary burden with MBD: yes (any MBD)	–4.23	0.48
MMPI personality scale (at dismissal): > 70 points	–6.66	0.47
Insomnia: yes	–2.52	0.45
Accentuations in premorbid: yes (psychasthenic)	–3.85	0.32
Attempt seasonality: autumn	–3.33	0.30
Age of disease onset: 15—19 years old	–4.01	0.30
Marital status: single	–2.26	0.20
MMPI interest scale (at admission): ≤ 70 points	–1.16	0.13
MMPI optimism scale (at dismissal): ≤ 70 points	–0.63	0.04
MMPI hysteria scale (at admission): ≤ 70 points	–0.63	0.04
MMPI anxiety scale (at dismissal): ≤ 70 points	–0.51	0.03

As mentioned above, sustainable traits for reliable differential diagnostics with minimum acceptable confidence level ($p < 0.05$) shall be considered to be the traits with DC > 13 (in modulus).

It follows from above that category of sustainable markers of acute stress reaction diagnosis include absence of anatomic thought disorders (DC = 18.78 at IM = 9.08) and absence of erythrocyte deformation (DC = 16.26 at IM = 4.36); and markers of schizophrenia diagnosis comprise anatomic thought disorders (DC = –17.02 at IM = 8.23), mental deficiency (< 70 points by Wechsler) (DC = –16.66 at IM = 7.41), delusions (persecution) (DC = –14.74 at IM = 4.16), paracusia (DC = –14.12 at IM = 3.44), disability (DC = –14.12 at IM = 3.44), diversity of interests (their detachment from reality) (DC = –13.12 at IM = 2.51), as well as rating by MMPI personality scale (at admission) > 70 points (DC = –13.59 at IM = 5.82).

Use of other (unsustainable) markers as part of the Wald's test (with sequential extension of diagnostic conclusion confidence) is conveniently illustrated in the context of the study results using MMPI scales (at admission).

Thus, diagnostic value of the most significant indicator in this category (ratings by MMPI personality scale ≤ 70 points [DC = 9.66 at IM = 4.14]) is insufficient for reliable identification of condition "Acute Stress Reaction", as trait DC < 13 ($p > 0.05$). However, use of this marker in combination with the following (informativity) rating by MMPI pessimism scale > 70 points (DC = 8.07 at IM = 2.27) provides for confidence of acute stress reaction diagnosis at the level of ($p < 0.05$), as $\Sigma_{DC} = 9.66 + 8.07 = 17.73 > 13$ units. Adding to this combination a rating by MMPI anxiety scale > 70 points (DC = 7.43 at IM = 1.97) improves the confidence of acute stress reaction diagnosis to the level of ($p < 0.01$), as $\Sigma_{DC} = 9.66 + 8.07 + 7.43 = 25.16 > 20$ units. Finally, adding to the final combination a rating by MMPI interest scale > 70 points (DC = 9.92 at IM = 1.14) improves the confidence of acute stress reaction diagnosis to the level of ($p < 0.01$), as $\Sigma_{DC} = 9.66 + 8.07 + 7.43 + 9.92 = 35.08 > 30$ units.

When testing the obtained diagnostic tables it was found that their application provides for 99.22 % of differentiation accuracy of acute stress reactions and schizophrenia among the individuals, who committed suicide attempts.

In problems on differentiation of acute stress reaction and schizophrenia among the individuals, who committed suicide attempts, the most informative markers of schizophrenia diagnosis are as follows: anatomic thought disorders (DC = –17.08 at IM = 8.37); mental deficiency

(< 70 points by Wechsler) (DC = –16.66 at IM = 7.41); gained (at admission) by the test individuals > 70 points, by MMPI personality scale (DC = –13.59 at IM = 5.82).

In problems on differentiation of acute stress reaction and schizophrenia among the individuals, who committed suicide attempts, the most informative markers of schizophrenia diagnosis are > 70 points by MMPI pessimism scale gained by the test individual (DC = 8.07 at IM = 2.27); by MMPI anxiety scale (DC = 7.43 at IM = 1.97); by MMPI interest scale (DC = 9.92 at IM = 1.14).

Use of obtained diagnostic tables as part of the Wald's test (modified by Ye. V. Gubler) provides for 99.22 % of differentiation accuracy of acute stress reaction and schizophrenia among the individuals committed suicidal attempts.

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Надійшла до редакції 18.09.2014 р.

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