RISK FACTORS FOR VASCULAR DEMENTIA

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ABSTRACT

Background. *An increase in the number of older people with cognitive disorders, including dementia, is expected.*
The aim. *To study the risk factors for vascular dementia.*
Material and methods. *39 patients with vascular dementia (ICD-10 diagnosis code F01) were examined. The comparison group consisted of 167 people. According to the MMSE (Mini Mental State Examination) scale, moderate dementia was detected in 56.4 % of cases, severe – in 43.6 %; in the comparison group, 94 % had mild and 6 % – moderate cognitive impairment.*
Results. *In the vascular dementia group, the following risk factors were registered significantly more often: ischemic heart disease – at the age of 70–79 years (57.1 %; p = 0.000) and in the group as a whole (56.4 %; p = 0.000); diabetes mellitus – at the age of 60–69 years (100 %; p = 0.005); arterial hypertension – at the age of 70–79 years (100 %; p = 0.000) and in the group as a whole (87.2 %; p = 0.000). In the comparison group, the frequency of body mass index over 25 was significantly higher at the age of 70–79 years (60 %; p = 0.000), 80 years and older (64.3 %; p = 0.037) and in the group as a whole (68.9 %; p = 0.000). Among people with moderate cognitive impairment, the following risk factors were significantly more common: coronary heart disease – at the age of 60–69 years (10 %; p = 0.001); diabetes mellitus – at the age of 70–79 years (40 %; p = 0.025) and in the group as a whole (50 %; p = 0.033), the frequency of body mass index over 25 – at the age of 80 years and older (70 %; p = 0.000) and in the group as a whole (100 %; p = 0.000).*
Conclusion. *Risk factors for the development of cognitive disorders (coronary heart disease, hypertension, diabetes mellitus, overweight) are potentially reversible; their timely detection can reduce the development of cognitive disorders and dementia.*

Key words: *cognitive impairment, vascular dementia, risk factors, prevention*

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ФАКТОРЫ РИСКА РАЗВИТИЯ СОСУДИСТОЙ ДЕМЕНЦИИ

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РЕЗЮМЕ

Обоснование. *Прогнозируется увеличение количества людей пожилого возраста с когнитивными расстройствами, в том числе с деменцией.*

Цель исследования. *Изучение факторов риска развития сосудистой деменции.*

Методы. *Обследованы 39 пациентов с сосудистой деменцией (F01 по МКБ-10); средний возраст – 75,2 ± 9,9 года. Группу сравнения составили 167 человек, посещающие школы памяти, у которых выявлено снижение когнитивных функций (средний возраст – 70,01 ± 3,03 года. По шкале MMSE (Mini Mental State Examination) умеренная степень деменции выявлена в 56,4 % случаев, тяжёлая – в 43,6 %; в группе сравнения в 94 % случаев отмечены лёгкие и в 6 % – умеренные когнитивные нарушения.*

Результаты. *В группе сосудистой деменции статистически значимо чаще выявлялись: ишемическая болезнь сердца (ИБС) в возрасте 70–79 лет (57,1 %; p = 0,000) и в группе в целом (56,4 %; p = 0,000); сахарный диабет в возрасте 60–69 лет (100 %; p = 0,005); артериальная гипертензия (АГ) в возрасте 70–79 лет (100 %; p = 0,000) и в группе в целом (87,2 %; p = 0,000). В группе сравнения частота индекса массы тела (ИМТ) более 25 была статистически значимо выше в возрасте 70–79 лет (60 %; p = 0,000), 80 лет и старше (64,3 %; p = 0,037) и в группе в целом (68,9 %; p = 0,000). Среди лиц с умеренными когнитивными расстройствами статистически значимо чаще встречались: ИБС в возрасте 60–69 лет (10 %; p = 0,001), сахарный диабет в возрасте 70–79 лет (40 %; p = 0,025) и в группе в целом (50 %; p = 0,033), ИМТ более 25 в возрасте 80 лет и старше (70 %; p = 0,000) и в группе в целом (100 %; p = 0,000). Общим фактором риска как для пациентов с сосудистой деменцией, так и для группы с умеренными когнитивными расстройствами оказался возраст 80 лет и старше (20,5 % (p = 0,027) и 70 % (p = 0,005) соответственно).*

Заключение. *Факторы риска развития когнитивных нарушений – ИБС, АГ, сахарный диабет, избыточная масса тела – являются потенциально обратимыми; их своевременное выявление позволит уменьшить развитие когнитивных расстройств и деменции.*

Ключевые слова: *когнитивные нарушения, сосудистая деменция, факторы риска, профилактика*

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Memory impairment is very common in elderly people; preservation of intellectual functioning is a current problem. The number of elderly people is predicted to increase as well as cognitive impairment, including dementia [1–4]. Changes in higher functions due to cerebropathy affect all spheres of life (social, professional, domestic) and can cause maladaptation [5–8]. However, even with pronounced cognitive impairment, the possibility of helping patients is limited due to the irreversibility of pathological processes [9, 10].

Cerebrovascular and neurodegenerative diseases hold the leading position among the causes of cognitive impairment, with vascular dementia being the second most frequent cause of mental deficiency, behind Alzheimer's disease [11, 12]. Due to the scale of prevalence, the difficulty of dementia therapy, correction of risk factors will reduce the prevalence of dementia by 8.5 % by 2050 [13].

Modifiable risk factors for dementia formation are arterial hypertension, alcohol abuse, smoking, depression, diabetes mellitus, heart disease, and excessive body weight [13]. Elevation in blood pressure in middle age increases the risk of developing dementia during the 18-year follow-up period by 60 % [14]. If arterial hypertension persists past the age of 60, the risk of developing dementia increases by up to 100 %. Blood pressure control medications are recommended for the prevention of dementia [15].

Patients having diabetes mellitus are 2 times more likely to develop dementia; the risk of dementia is related to the duration and severity of diabetes [16–18]. It is believed that patients with type 2 diabetes mellitus may have elevated amyloid levels [19, 20].

Obesity is associated with a 30 % increased risk of developing dementia in advanced age [21]. Cerebral atrophy is more likely to form in the case of obesity [22]. Metabolic syndrome also contributes to cognitive impairment [23].

Education, professional activities, and active leisure time contribute to the preservation of cognitive abilities [24]. A low level of education achieved in youth increases the risk of dementia formation by 1.72 times; the protective role of a high level of education will reduce the possibility of dementia development by 4 % [25]. The risk of dementia is 40 % higher in the elderly and 20 % higher in the widowed compared to the married; in contrast, social contact, especially in old age, increases cognitive reserve [26, 27].

Increased awareness of modifiable risk factor prevention has a positive impact on the prevalence of cognitive decline. For example, information about risk factors for dementia formation obtained through the Internet motivated 55.6 % of users to change their lifestyle and 27 % to visit a doctor for treatment of existing diseases [28].

Thus, the provision of timely care to patients with vascular dementia is closely related to early diagnosis, prevention and treatment of cognitive and related disorders in old age, awareness of risk factors for their formation [29, 30].

The aim of the study was to investigate risk factors for the development of vascular dementia.

MATERIALS AND METHODS

39 patients with vascular dementia (ICD-10 diagnosis code F01) were studied: men – 18, women – 21; mean age at the time of examination – 75.2 ± 9.9 years. Patients were examined and treated in general departments of the Irkutsk Regional Clinical Psychiatric Hospital No. 1. Vascular post-stroke dementia was diagnosed in 7 (17.9 %) patients and vascular subcortical dementia in 32 (82.1 %) patients. The vascular dementia diagnosis was confirmed by the diagnostic criteria for vascular cognitive impairment [31]. Neuropsychological study was performed using the scales of the Mini Mental State Examination (MMSE), Montreal Cognitive Assessment (MoCA). Patients with moderate (11–19 points as per the MMSE scale) and severe dementia (10 or less) were included in the study. The frequency of risk factors for the development of vascular dementia – arterial hypertension, coronary heart disease, type 2 diabetes mellitus – was studied on the basis of patient history and clinical examination results, and body mass index was calculated.

Patients with organic amnestic syndrome, delirium, paranoid hallucinatory syndrome, Alzheimer's disease, epilepsy, toxic, drug, metabolic encephalopathy, somatic pathology in decompensation stage, brain injuries were excluded from the study.

The comparison group consisted of seminar and school attendees on the prevention of memory disorders as part of the exhibition "Sibzdravookhranenie" and on the basis of the Center for Preventive Medicine "Zdorovye" (Irkutsk), in whom cognitive decline was detected (n = 167; men – 11, women – 156; mean age – 70.01 ± 3.03 years). The study to identify cognitive impairment and risk factors was conducted by interview method using a written questionnaire. The questionnaire included complaints about memory decline and other cognitive dysfunctions, socio-demographic characteristics, data on the presence of somatic pathology (arterial hypertension, coronary heart disease, diabetes mellitus); body mass index was calculated. In the neuropsychological study, the MMSE, MoCA scales were used. Patients with mild (24–27) and moderate (20–23) cognitive impairment were included in the study.

This study was conducted in accordance with the provisions of the World Medical Association Declaration of Helsinki on Medical Ethics, respecting the rights, interests and personal dignity of the participants. A local ethics committee approved the conduct of the study (Research Ethics Committee of Irkutsk State Medical Academy of Postgraduate Education – branch of the Russian Medical Academy of Continuous Professional Education of the Ministry of Healthcare of the Russian Federation; extract from the protocol No. 1 of 24.01.2019). All subjects who underwent cognitive diagnosis at the School of Memory signed voluntary informed consent for the reporting of their data. An informed consent for data reporting was obtained from relatives of patients with vascular dementia.

Statistical analysis of the study results was performed using Statistica 10.0 for Windows software package (StatSoft Inc., USA). Pearson's χ^2 test, Fisher's test (in case $n < 4$) were used for statistical calculations.

RESULTS

In the group of patients with vascular dementia as per the MMSE scale, the severity of dementia corresponded to a moderate degree of severity (11–19; mean – 14.5 ± 1.3) in 22 (56.4 %) people, severe (0–10; mean – 6.7 ± 2.5) – in 17 (43.6 %). All patients showed a decrease in scale score according to the MoCA scale (mean – 13.3 ± 1.1).

Among patients having vascular dementia, arterial hypertension stage II–III was detected in 87.2 % of cases; coronary heart disease (CHD) – in 56.4 %, including stable angina II–III functional class (FC) – in 33.3 %, coronary artery atherosclerosis – in 15.4 %; atrial fibrillation – in 7.7 %. CHD was complicated by congestive heart failure (CHF) II FC in 41 % of cases, III FC – in 15.4 %. Type 2 diabetes mellitus was detected in 15.4 % of cases. The mean duration of follow-up for arterial hypertension was 16.3 ± 2.4 years, for coronary heart disease – 13.8 ± 1.9 years, and for diabetes mellitus – 14.6 ± 3.8 years. Body mass index (BMI) > 25 was determined in 6 (15.4 %) patients having vascular dementia.

Magnetic resonance imaging (MRI) studies of patients with post-stroke vascular dementia revealed focal changes in the frontoparietal localization of both hemispheres, temporo-occipital region in the basal ganglia of the left hemisphere, thalamus; subcortical foci of leukoareosis in the anterior parts of the brain, frontal lobe white matter, basal ganglia, thalamus (84.6 %). Patients with vascular subcortical dementia had leukoaraiosis in the anterior, frontal and posterior parts of the brain in 35.9 % of cases, with partially or total foci in the basal ganglia, frontal lobes, thalamus region of the left hemisphere – in 25.6 %, in the thalamus region with bilateral localization – in 20.5 %.

In the comparison group (n = 167), a neuropsychological study, based on the MMSE scale, revealed mild cognitive impairment (24–27 points) in 157 (94 %) people, moderate cognitive impairment (23 points) – in 10 (6 %); as per the MoCA scale, a decrease was noted in all attendees, the mean value was 22.1 ± 1.1 points. Stage II–III arterial hypertension was detected in 44.3 % of cases, CHD in 7.8 %, type 2 diabetes mellitus in 10.2 %, and body mass index over 25 in 68.9 %.

As a result of the comparative study, the mean age of patients with vascular dementia was higher than in the comparison group, but the differences were not statistically significant (Table 1). Males were statistically significantly more common in the vascular dementia group (46.2 %; χ^2 = 40.9207; p = 0.000) and females in the comparison group (93.4 %; χ^2 = 40.9207; p = 0.000). Comparative analysis of age periods revealed a statistically significant higher number of subjects in schools of memory aged 60–69 years (46.7 %; χ^2 = 20.1697; p = 0.000) compared with patients having vascular dementia (7.7 %). In contrast, ages 70–79 years (71.7 %; χ^2 = 9.1407; p = 0.003) and 80 years and older (20.5 %; χ^2 = 4.8764; p = 0.027) were statistically significantly more prevalent in the vascular dementia group. Patients with vascular dementia were characterized by higher values of secondary education than the comparison group (51.3 % and 17.9 %, respectively; χ^2 = 78.0598; p = 0.000). In contrast, there were statistically significantly more people with vocational secondary education (67.1 % and 28.2 %, respectively; χ^2 = 19.8466; p = 0.000) and higher education (29.9 % and 20.5 %, respectively; no statistical difference) among those attending schools of memory than among patients with vascular dementia. Widows and widowers were statistically significantly more common in the group with vascular dementia (76.9 %; χ^2 = 60.1253; p = 0.000). In contrast, people in the comparison group were statistically significantly more likely to be married (78.4 %; χ^2 = 52.3227; p = 0.000). Absence of disability was statistically significantly more common in the memory school attendee group compared with the vascular dementia group (89.8 % and 17.9 %, respectively; χ^2 = 90.088; p = 0.000). Among patients, 38.5 % had the first disability group due to a diagnosis of vascular dementia, while 1 patient (0.6 %) in the comparison group; and it was formalized due to a general disease (χ^2 = 63.2701; p = 0.000). The second disability group was observed in 43.7 % of patients with vascular dementia (χ^2 = 47.6778; p = 0.000) and 4.2 % in the comparison group; in both cases due to a general disease. The third disability group was formalized in 8 (4.8 %) people attending the school of memory.

A comparative study of risk factors in patients with vascular dementia and in persons of the comparison group was carried out (Table 2). Among patients with vascular dementia, the incidence of CHD was statistically significantly higher than in the comparison group at ages 70–79 years (57.1 % and 10.7 %, respectively; χ^2 = 24.642; p = 0.000) and in the overall group (56.4 % and 7.8 %, respectively; χ^2 = 53.005; p = 0.000). The incidence of diabetes mellitus among patients having vascular dementia was statistically significantly higher at ages 60–69 years (100 % and 15.4 %, respectively; p = 0.005) and with no statistical difference at ages 70–79 years (10.7 % and 6.7 %, respectively). The incidence of BMI greater than 25 was statistically significantly more frequent in the comparison group at ages 70-79 years (60 %; p = 0.000), 80 years and older (64.3 %; p = 0.037), and in the overall group (68.9 %; χ^2 = 37.3068; p = 0.000). The highest incidence of BMI greater than 25 was between the ages of 60–69 years in both groups – patients with vascular dementia (100 %) and the comparison group (78.2 %). Arterial hypertension in patients diagnosed with vascular dementia was statistically significantly more frequent in the overall group (87.2 %; χ^2 = 23.2547; p = 0.000) and in those aged 70–79 years (100 %; χ^2 = 42.377; p = 0.000) than in the comparison group (44.3 % and 28 %, respectively).

The results of risk factors in patients with vascular dementia and in the comparison group with moderate cognitive impairment are given in Table 3.

A statistically significant higher proportion of patients with vascular dementia were aged 70-79 years (71.7 %; p = 0.004); in contrast, the group with moderate cognitive impairment was aged 80 years or older (70 %; χ^2 = 9.1764; p = 0.002). Individuals having moderate cognitive impairment were statistically significantly more likely to have vocational secondary education (70 %; χ^2 = 5.9823; p = 0.014).

TABLE 1

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PATIENTS WITH VASCULAR DEMENTIA AND COMPARISON GROUP

Indicators	Vascular dementia group (n = 39)		Comparison group (n = 167)		p
	abs.	%	abs.	%	
Mean age	75.2 ± 9.9		70.01 ± 3.03		0.617
Men	18	46.2	11	6.6	0.000 (χ^2 = 40.9207)
Women	21	53.8	156	93.4	0.000 (χ^2 = 40.9207)
60–69 years	3	7.7	78	46.7	0.000 (χ^2 = 20.1697)
70–79 years	28	71.7	75	44.9	0.003 (χ^2 = 9.1407)
80 years and older	8	20.5	14	8.4	0.027 (χ^2 = 4.8764)
Education					
Secondary	20	51.3	3	17.9	0.000 (χ^2 = 78.0598)
Vocational secondary	11	28.2	112	67.1	0.000 (χ^2 = 19.8466)
Higher	8	20.5	50	29.9	0.239 (χ^2 = 1.3890)
Incomplete higher	–	–	2	1.2	–
Family status					
Married	7	17.9	131	78.4	0.000 (χ^2 = 52.3227)
Divorced	2	5.1	10	5.9	0.836 (χ^2 = 0.0426)
Widowed	30	76.9	26	15.6	0.000 (χ^2 = 60.1253)
Disability					
No	7	17.9	150	89.8	0.000 (χ^2 = 90.088)
First disability group	15	38.5	1	0.6	0.000 (χ^2 = 63.2701)
Second disability group	17	43.7	7	4.2	0.000 (χ^2 = 47.6778)
Third disability group	–	–	8	4.8	–

A body mass index greater than 25 was more frequently detected at all ages studied in the group with moderate cognitive impairment, including a statistically significant difference between those aged 80 years and older (70 %; p = 0.000) and the overall group (100 %; χ^2 = 25.9135; p = 0.000). Arterial hypertension was statistically significantly more frequently reported in patients having vascular dementia aged 70–79 years (71.8 %; p = 0.004), in the group with moderate cognitive impairment – aged 80 years and older (70 %; p = 0.000). In the comparison group with moderate cognitive impairment, CHD with a statistically significant difference was more frequently detected at ages 60–69 years (10 %; p = 0.001), while in patients having vascular dementia it was detected at ages 70–79 years (41 %). Diabetes mellitus among subjects with moderate cognitive impairment was statistically significantly more common in those aged 70–79 years (40 %; p = 0.025) and in the overall group (50 %; χ^2 = 5.4780; p = 0.033).

All patients with vascular dementia had psychopathological disorders including psychomotor retardation, difficulty in refocusing, and impaired working memory. Dysregulatory disorders in the form of difficulties in decision-making and planning were found in 84.6 % of cases, confabulations – in 43.6 %, elements of amnestic aphasia – in 28.2 %. Depressive symptoms were detected in 43.6 % of patients in the form of sad mood with a dreary tinge, indifference, apathy. The clinic of vascular dementia was characterized by flickering symptoms with intensification of confused mental state in the evening and at night, disturbance of temporal-spatial gnosis, psychopathy-like behavioral disorders in the form of irritability and aggression. In 15.4 % of cases, psychotic symptomatology included paranoid delusion of small range and episodes of visual hallucinosis. All patients were non-critical of their condition.

The therapy of patients diagnosed with vascular dementia in a psychiatric hospital for symptomatic improvement of cognitive functions and maintenance of their daily activity included the use of memantine. Among neuroprotective drugs were used ethylmethylhydroxypyridine succinate (79.5 %), deproteinized hemoderivative of calf blood (69.2 %), vinpocetine (69.2 %), aminophenyl-butyric acid hydrochloride (48, 7 %), cerebrolysin concentrate (41 %). The antipsychotic agents, such as chlorprotixen

TABLE 2

RISK FACTORS IN PATIENTS WITH VASCULAR DEMENTIA AND IN THE COMPARISON GROUP

Age	Comparison group (n = 167)		Vascular dementia group (n = 39)		p
	abs.	%	abs.	%	
			CHD		
60–69 years	5/78	6.4	1/3	33.3	0.209
70–79 years	8/75	10.7	16/28	57.1	0.000 (χ^2 = 24.642)
80 years and older	–	–	5/8	62.5	–
Total	13/167	7.8	22/39	56.4	0.000 (χ^2 = 53.005)
			Diabetes mellitus		
60–69 years	12/78	15.4	3/3	100	0.005
70–79 years	5/75	6.7	3/28	10.7	0.375
80 years and older	–	–	–	–	–
Total	17/167	10.2	6/39	15.4	0.353
			BMI > 25		
60–69 years	61/78	78.2	3/3	100	0.488
70–79 years	45/75	60	2/28	7.1	0.000
80 years and older	9/14	64.3	1/8	12.5	0.037
Total	115/167	68.9	6/39	15.4	0.000 (χ^2 = 37.3068)
			Arterial hypertension		
60–69 years	43/78	55.1	3/3	100	0.254
70–79 years	21/75	28	28/28	100	0.000 (χ^2 = 42.377)
80 years and older	10/14	71.4	3/8	37.5	0.1836
Total	74/167	44.3	34/39	87.2	0.000 (χ^2 = 23.2547)

(28.2 %), quetiapine (15.4 %), risperidone (7.7 %), were used for the treatment of behavioral and psychotic disorders. Such antidepressants as pipofezine (28.2 %), agomelatine and escitalopram (7.7 % each) were used for the treatment of affective disorders. Antiepileptic Drugs – valproic acid (15.4 %), carbamazepine (12.8 %) – were used in agitated patients.

CONCLUSION

Thus, risk factors for the formation of vascular dementia have been investigated as a result of this study. Moderate dementia was found in 56.4 % of patients with vascular dementia and severe dementia in 43.6 %; mild (94 %) and moderate (6 %) cognitive impairment was diagnosed in the comparison group.

Patients with vascular dementia were statistically significantly more likely to be male (46.2 %; p = 0.000), age ranges 70–79 years (71.7 %; p = 0.003) and 80 years and older (20.5 %; p = 0.027), persons having secondary education (51.3 %; p = 0.000), widows and widowers (76.9 %; p = 0.000). Patients had first and second disability groups (38.5 % (p = 0.000) and 43.7 % (p = 0.000), respectively).

The comparison group had statistically significantly more females (93.4 %; p = 0.000), individuals with vocational secondary education (67.1 %; p = 0.000) and higher education (29.9 %; no statistical difference). Memory school attendees were married 78.4 % of the time (p = 0.000) and 89.8 % had no disability group (p = 0.0000).

Among risk factors, CHD was statistically significantly more frequent in patients with vascular dementia compared with memory school attendees at age 70–79 years and in the overall group (p = 0.000, p = 0.000) and diabetes mellitus at age 60–69 years (p = 0.005); the incidence of arterial hypertension was statistically significantly higher at age 70–79 years (p = 0.000) and in the overall group (p = 0.000). In the comparison group, the incidence of BMI greater than 25 was statistically significantly higher at ages 70–79 years (p = 0.000), 80 years and older (p = 0.037), and in the overall group (p = 0.000) than in patients having vascular dementia.

TABLE 3

RISK FACTORS IN PATIENTS WITH VASCULAR DEMENTIA AND IN THE COMPARISON GROUP WITH MODERATE COGNITIVE IMPAIRMENT

Risk factors	Vascular dementia group (n = 39)		Comparison group – moderate cognitive impairment (n = 10)		p
	abs.	%	abs.	%	
Mean age	75.2 ± 9.9		78.3 ± 6.3		0.793
Men	18	46.2	3	30	0.126
Women	21	53.8	7	70	0.290
60–69 years	3	7.7	1	10	0.612
70–79 years	28	71.7	2	20	0.004
80 years and older	8	20.5	7	70	0.002 (χ^2 = 9.1764)
Education					
Secondary	20	51.3	2	20	0.076
Vocational secondary	11	28.2	7	70	0.014 (χ^2 = 5.9823)
Higher	8	20.5	1	10	0.403
Family status					
Married	7	17.9	–	–	–
Divorced	2	5.1	1	10	0.504
Widowed	30	76.9	9	90	0.335
Disability					
No	7	17.9	–	–	–
First disability group	15	38.5	1	10	0.086
Second disability group	17	43.7	4	40	0.565
Third disability group	–	–	4	40	–
BMI > 25					
60–69 years	3	7.7	1	10	0.612
70–79 years	2	5.1	2	20	0.180
80 years and older	1	2.6	7	70	0.000
Total	6	15.4	10	100	0.000 (χ^2 = 25.9135)
Arterial hypertension					
60–69 years	3	7.7	1	10	0.612
70–79 years	28	71.8	2	20	0.004
80 years and older	3	7.7	7	70	0.000
Total	34	87.2	10	100	0.302 (χ^2 = 1.4277)
Coronary heart disease					
60–69 years	1	2.6	1	10	0.001
70–79 years	16	41.0	2	20	0.066
80 years and older	5	12.8	–	–	–
Total	22	56.4	3	30	0.127
Diabetes mellitus					
60–69 years	3	7.7	1	10	0.612
70–79 years	3	7.7	4	40	0.025
80 years and older	–	–	–	–	–
Total	6	15.4	5	50	0.033 (χ^2 = 5.4780)

The group of persons with moderate cognitive impairment in comparison with patients with vascular dementia revealed a statistically significantly higher number of subjects aged 80 years and older ($p = 0.002$), with vocational secondary education (70 %; $p = 0.014$); there were also statistically significantly higher incidence of CHD at the age of 60–69 years ($p = 0.001$), diabetes mellitus at the age of 70–79 years ($p = 0.025$) and in the overall group ($p = 0.033$), body mass index greater than 25 – at the age of 80 years and older ($p = 0.000$) and in the overall group ($p = 0.000$). A common risk factor for both patients with vascular dementia and the group with moderate cognitive impairment was age 80 years or older ($p = 0.027$ and $p = 0.005$, respectively).

Clinical features of patients diagnosed with vascular dementia in a psychiatric hospital were characterized by severe cognitive impairment, affective, psychotic and behavioral disorders, which required prescription of combined therapy (memantine, antipsychotic agent, antidepressant, normothymic agent).

The organization of health schools for both patients with memory impairment and those with risk factors will increase the level of knowledge on preventing the development of cognitive impairment. Risk factors for cognitive decline (education level, marital status (social contacts), cardiovascular diseases (coronary heart disease, arterial hypertension), diabetes mellitus, overweight) are potentially reversible, and their timely detection will reduce the development of cognitive impairment and dementia.

Conflict of interest

The author of this article declares the absence of a conflict of interest.

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