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Strokes in the elderly and long-livers of Yakutsk

Epidemiological indexes of prevalence of cerebral stroke are studied. Gender and ethnic features of cerebral stroke prevalence according to population screening of Yakutsk residents at the age of 60 years and elder are shown.

Keywords: strokes, prevalence.

Introduction

The stroke is on the second place in structure of the causes of mortality and is the major cause of physical inability in Russia. 75 % of strokes go to on age elder than 60 years [1].

For last 7 years in population of Yakutsk deterioration of epidemiological situation concerning a stroke, bound to growth of morbidity and a tendency to growth of mortality [2] is observed.

Objective: To estimate frequency, gender and ethnic features of a cerebral stroke in subjects of 60 years and senior, living in Yakutia, on an example of Yakutsk city population.

Background and methods

For carrying out of population screening representative sample of Yakutsk residents in number of 600 persons at the age of 60 years and senior has been generated on the basis of service records. The surveyed have been divided according to sex: men (256 - 43 %) and women (344 - 57 %) and to age decades (60-69 yrs, 70-79, 80-89 and 90 years and senior). According to ethnicity two groups are marked out: indigenous ethnos (Yakuts, Evens, Evenks) - 277 and non-indigenous ethnos (Russians, Ukrainians, Byelorussians, Germans, Finns) - 323 persons (mean age of the surveyed - 75 yrs).

The examination program included following obligatory partitions: the socially-demographic data, questioning for revealing of the old acute cerebral impairment and neurologic examination. All cases of the old cerebral stroke were considered.

Questioning and examination procedures have been standardized and carried out according to the recommendations which have been taken over in epidemiological researches (Rose G. et al, 1982, Oganov R. G, 1990).

Criteria of a stroke diagnostics corresponded to the WHO standard recommendations: the stroke is defined as signs which have unexpectedly developed clinical signs of local or general (in a case of subarachnoid hemorrhage) cerebrovascular impairment, lasting more than 24 hours or leading death for shorter time term.

Research findings have been subjected to statistical processing with use of package SPSS (version 11,5). For quantitative indicators in compared groups the assessment of average arithmetic and mean-square deviations and (standard) errors of mean was made. These descriptive statistics are designated as $M \pm m$, where M - an average, and m - an error of mean. T - Student criterion for normal allocation of indexes and nonparametric methods for the indexes which allocation differed from the normal were used. The value $p < 0,05$ was taken as a criterion of statistical confidence. At studying of cerebral stroke prevalence the method of direct standardizing was applied. Thus for the standard age-gender composition of the Yakutsk population senior 60 years by results of census of 2002 was taken.

Research results

The statistical analysis has shown that the standardized on age index of prevalence of the old stroke in the surveyed population of Yakutsk senior 60 years has made up 3,5 % for persons of both sexes. Distinctions in prevalence of a stroke in men (1 %) and women (2,5 %) were not statistically significant ($p=0,8$). The standardized indexes of prevalence of a stroke have formed 2,8 % of ischemic and 0,7 % of hemorrhagic stroke for persons of both sexes (fig. 1)

The cerebral stroke in the anamnesis is registered among 125 surveyed people that has formed 21 %. Among the surveyed men the stroke was in 52 people that has formed 21 %, among women - 73 people (20 %).

Mean age of persons of both sexes with a cerebral stroke was 79,14 yrs, with ischemic stroke - 78,9 yrs (men-78,04, women-79,65), with hemorrhagic stroke - 80,11 yrs (men - 79,29, women - 80,4 yrs).

When one is older frequency of a stroke dramatically increases: at the age of 80-89 years - twice more often, than in persons of 60-69 years, and at the age of 90 years - three times more often, than in the first age decade. The greatest prevalence of a stroke is revealed at the long -

livers (41, 3 %), the smallest in men at the age of 60-69 years - 10, 2 %. In group of long-livers statistically significant increase of a cerebral stroke frequency in women, than in men ($p=0,013$) is marked.

In geront's city population in all age decades statistically significant increase of frequency of ischemic stroke, than hemorrhagic stroke (tab. 1) is revealed. The ischemic stroke is documented in 17 % of the surveyed, including 18 % of the surveyed men and in 16 % of women. The hemorrhagic stroke was in 4 % of persons among the surveyed, in men this type of a stroke took place in 2 %, in women - in 5 %.

Table 1

The cerebral stroke in the Yakutsk population at the age of 60 years and senior

Age, years	Ischemic stroke	Hemorrhagic stroke	P
	%	%	
60-69	10,9	3,1	0,002
70-79	16,4	2,0	0,000
80-89	20,4	5,2	0,000
≥ 90	30,0	10,0	0,011

The cerebral stroke is registered in 22 % of the natives, including in 9 % of men and 12 % of women. Among the non-natives the cerebral stroke is noted in 20 % from number of the inspected non-native population, in 8 % of men and in 12 % of women. The ischemic stroke is revealed in 16, 6 % of the natives and in 17,3 % of the non-natives. 4, 7 % of the natives and 3, 1 % of the non-natives had hemorrhagic stroke.

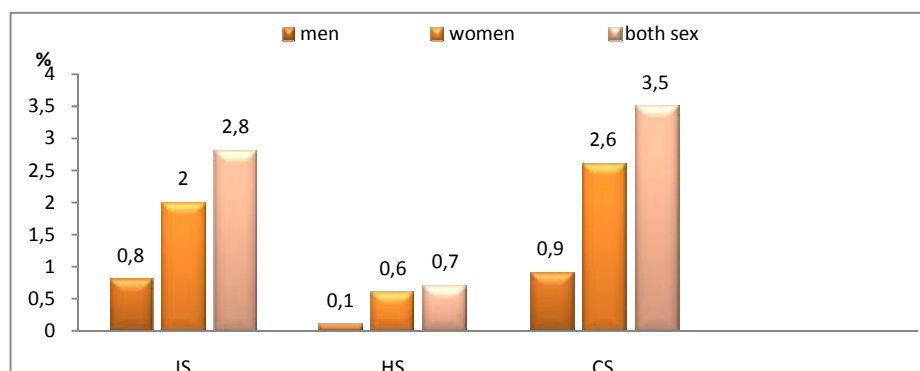
Under our data, the ischemic stroke was met in 4 times more often than hemorrhagic, with HS and IS interrelation 1: 4,4 (in absolute figures 23 and 102 cases, accordingly). The analysis of prevalence of a cerebral stroke on age-grades has revealed that frequency of ischemic stroke was statistically significantly higher than a hemorrhagic stroke in all age decades. In long-livers frequency of a cerebral stroke was higher in 3 times in comparison with an age-grade of 60-69 years (in men in 3,5 times, in women in 2,4 times).

Among patients of indigenous and non-indigenous nationality the ischemic stroke prevailed. Interrelation HS and IS has formed 1:3, 5 in the natives (in absolute figures 13 and 46 accordingly) and 1:5, 6 in the non-natives (in absolute figures 10 and 56 accordingly).

Hemorrhagic variants of a stroke (HS) in elderly and aged persons were met infrequently in comparison with patients of young and middle age though the first often had hypertensive disease. Possibly, vascular malformations, aneurysms are more often sources of intracerebral hemorrhages at young age, rather than in 60 years and senior [4]. In process of ageing the number of hemorrhagic forms of a stroke [3] decreases.

Conclusions

1. In persons of elderly and senile age, including long-livers of Yakutsk high prevalence of a cerebral stroke is registered.
2. Positive age dynamics of frequency of strokes and prevalence of ischemic types of a stroke over hemorrhagic ones is shown.
3. Frequency of a stroke in long-livers in 3 times surpasses a similar index in persons of advanced age.
4. Ischemic strokes in population of elderly and long-livers of Yakutia are met slightly more often in the non-indigenous, than in the indigenous population. And hemorrhagic strokes are met more often in the indigenous residents, than in the non-indigenous ones.



Notes: IS- ischemic stroke, HS - hemorrhagic stroke, CS - cerebral stroke.

Fig. 1. Prevalence of cerebral strokes among the elderly population ≥ 60 years of Yakutsk (the indexes standardized on age)

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Genetics multiple sclerosis of patients, inhabitants Yakutia

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Annotation

Results of genetic research on row of gene-candidates determining predisposition to multiple sclerosis disease are given.

For the first time it is shown that disease has reliable association with reception gene CD40 and cytokine gene TNF- α .