AGE STRUCTURE OF PATIENTS WITH STROKE

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The aim of this study was exploring age as risk factor for stroke among 173 stroke cases which registered during 3 years (01.01.2007-31.12.2009) in Siyazan region of Azerbaijan. Mean age of stroke cases during investigated years was 65.2 ± 0.9 . Males had stroke at a younger age - 62.2 ± 1.3 than females - 68.2 ± 1.2 ($p < 0.001$). Patients residing in rural areas had stroke at older age than urban population, which was at a statistically significant level. Most of the stroke patients fell into the age groups of 50-59 and 70-79. In first age group men, in second women. Mean age for ischaemic and hemorrhagic stroke cases was 65.8 ± 0.9 and 57.6 ± 3.4 , respectively.

Keywords: stroke, age, risk factor.

Stroke is the second most common cause of death and a frequent cause of adult disability worldwide [1,2]. There are some countries in which the mortality rates of stroke are particularly high, even in more recent years. This includes Azerbaijan, also [3].

Age is the one of the most important non-modifiable risk factor for stroke, with at least a doubling of stroke risk in each decade over age 55 [4]. Some risk factors of stroke are acquired at a younger age (eg, smoking) and thus age can be considered a marker for the duration of exposure to a risk factor, whereas other risk factors tend to become more prevalent with advancing age (eg, hypertension and diabetes) [4]. Men in the United States aged 55 to 64 years were 3 times more likely than men aged 45 to 54 years to have experienced a stroke [5]. The results of Stroke register in Russia showed that, incidence of stroke increased in 30-39 age groups from 0.15‰, to 27.7‰ in age groups >70 [6]. Instead of predicting reduction of incidence about 35% in some developed European countries in future 20 years, in the end of this period due to population aging the number of patient with stroke will increase 11% [6]. The aim of our study was exploring age structure in patients with stroke.

Materials and method. We studied 173 stroke cases which registered in Siyazan region of Azerbaijan using Stroke Registry program during

3 years (01.01.2007-31.12.2009). Results with CI of 95-99.9% ($p < 0.05-0.001$) were considered statistically significant [7]. Calculations were performed in Microsoft Excel spreadsheet.

Results. From 173 stroke cases 85 comprised of males ($49.1 \pm 3.8\%$) and 88 of females ($50.9 \pm 3.8\%$). Age interval of patients was 25-91. Average ages of stroke patients are presented in Table 1.

As seen from the Table 1, average ages of stroke cases for the study period did not demonstrate statistically significant differences. Mean age of stroke cases during investigated years was 65.2 ± 0.9 .

During the study period, men had stroke at a younger age than women (Table 2), with the difference of 9.7%. Patients residing in rural areas had stroke at elder age than urban population, which was at a statistically significant level.

Table 1

Average age of stroke patients in Siyazan region (2007-2009)

	Year			
	2007	2008	2009	2007-2009
Number of cases (n)	52	55	66	173
Average age	64.8 ± 1.5 (42-90)	64.1 ± 1.8 (25-88)	66.5 ± 1.4 (43-91)	65.2 ± 0.9 (25-91)

Note: $p > 0.05$; in comparison with each other.

Table 2

Average age characteristics (by gender, residence, and age group) of stroke patients in Siyazan region (2007-2009)

	Male	Female	Urban	Rural	Old	Young
Number of cases (n)	85	88	122	51	166	7
Mean age	62.2 ± 1.3 (25-85)	68.2 ± 1.2 (26-91)	64.1 ± 1.1 (25-91)	68.1 ± 1.4 (47-90)	66.5 ± 0.8 (47-91)	35.6 ± 3.6 (25-44)
	$p < 0.001$		$p < 0.05$		$p < 0.001$	

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Average age of patients who treated at home was higher in comparison with that receiving in-patient treatment (Table 3). Average ages of lethal and non-lethal stroke cases did not demonstrate a statistically significant difference. Study results show that patients experience hemorrhagic stroke at a younger age than ischemic stroke.

Table 3

Average age characteristics (by treatment facility, outcome, and clinical form of stroke) of stroke patients in Siyazan region (2007-2009)

	In-patient treatment	Treated at home	Survivals	Deaths	Ischemic stroke	Hemorrhagic stroke
Number of cases (n)	62	111	118	55	133	22
Average age	62.1±1.5 (25-81)	67.0±1.1 (25-91)	64.2±1.0 (25-82)	67.5±1.9 (25-91)	65.8±0.9 (42-86)	57.6±3.4 (25-75)
	p<0.05		p>0.05		p<0.001	

Among patients with stroke, 7 were young individuals up to 45 years (4.0±1.5%) and 166 elderly (96.0±1.5%). From younger group, 42.86±18.7% consisted of females (3 cases) and 57.14±18.7% of males (4 cases). From elderly, 48.8±3.9% were males (81 cases) and 51.2±3.9% were females (85 cases). Average age was 35.6 among young patients and 66.5 among elderly.

Table 4

Percentage of stroke cases by age and gender (2007-2009)

Age group		Absolute number	Weight p±m; %
20-29	Total	3	1.7±1.0
	M	2	1.16±0.8
	F	1	0.58±0.58
30-39	Total	0	0
40-49	Total	12	6.9±1.9
	M	8	4.6±1.6
	F	4	2.3±1.1
50-59	Total	45	26.0±3.3***
	M	30	17.3±2.9
	F	15	8.7±2.1
60-69	Total	37	21.4±3.1*
	M	17	9.8±2.3
	F	20	11.6±2.4
70-79	Total	63	36.4±3.7**
	M	26	15.0±2.7
	F	37	21.4±3.1
80-89	Total	11	6.4±1.9***
	M	3	1.73±1.0
	F	8	4.62±1.6
90<	Total	2	1.7±1.0**
	M	0	0
	F	2	1.7±1.0

Note: *p>0.05, **p<0.05, ***p<0.0001; * - difference in comparison with previous age group.

During the period of study, most of the stroke patients fell into the age groups of 50-59 and 70-79 (Table 4). stroke more in age group 50-59, and females in age group 70-79, than other age groups, whereas, in other age groups no statistically significant differences were identified between males and

females ($p < 0.05$). No stroke cases were reported for the age group of 30-39.

Mean ages for ischemic and hemorrhagic stroke cases were 65.8 ± 0.9 and 56.7 ± 3.4 , respectively. As seen, hemorrhagic strokes occurred at younger ages in comparison with ischemic strokes.

Among ischemic strokes 3 patients ($2.3 \pm 1.3\%$) were young individuals up to 45 years and 130 ($97.7 \pm 1.3\%$) were elderly. Among hemorrhagic strokes 4 patients ($15.4 \pm 7.1\%$) were young and 22 ($84.6 \pm 7.1\%$) were elderly.

Discussion. We compare age factor in our patients with other studies. Mean age of stroke cases was 65.2 ± 0.9 , which is comparable to results obtained in other studies, such as the ones conducted in Barcelona, Spain (66.0) [8], Ege, Turkey (62.3 ± 12.0) [9], Nablus, Palestine (69.09 ± 10.9) [10]. During the study conducted in United Kingdom (Southern London), it was identified that average age of stroke patients was 71.1, which is higher than our finding [11]. In the other study in UK, which covered 1999-2008 years, the average age at first stroke was 77 years in women and 71 years in men [12].

In a 3-year randomized study conducted in Kazan, average age of stroke cases with the onset of disease in May and treated at home, was 74.3, with 68.5 and 75.5 among males and females, respectively [13]. Findings of the study conducted in Ufa, Russia, using Stroke Registry approach, demonstrated average age of 66.86 ± 11.79 among males and 72.17 ± 11.5 among females, which shows no statistically significant difference when compared to the results of this study [14].

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As we show at the top, most of the stroke patients fell into the age groups of 50-59 for men and 70-79 for women. Among the first age group prevailed men with arterial hypertension, coronary heart diseases (CHD) and diabetes mellitus, among the second group women prevailed with similarly risk factors.

In one study, which conducted in Azerbaijan among 32 patients with ischemic stroke under 45 years old, has shown that in young people rheumatic vasculitis, heart, kidney, blood diseases and family hypercholesterolemia are the most occurring risk factors of stroke [15].

African americans, American indians/Alaska natives, Asians and Hispanic Americans die from stroke in early ages in comparison with Caucasians [16, 17, 18].

In 50-59 age group treatment of atrial fibrillation with varfarin reduced stroke risk for 68%, in 60-69 age group treatment of atrial fibrillation with aspirin reducing stroke risk for 21% [11].

In middle-aged and elderly men increasing of blood pressure as a response under stress situations caused raising risk of thromboembolic ischemic stroke [19].

As we see from the most studies aging increases risk of stroke with an increased frequency of other risk factors.

Conclusion. In this study we discussed age factor for stroke, and we find that, some age groups needs in preventive treatment of stroke. It could reduce incidence of stroke in region.

Conflict of interest. The authors declare no financial or other conflict of interests.

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XÜLASƏ

İNSULTLU XƏSTƏLƏRİN YAŞ STRUKTURU

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Təqdim edilmiş məqalənin məqsədi Siyəzən rayonunda 3 il (01.01.2007-31.12.2009) ərzində qeydiyyatda alınmış 173 xəstədə yaşın risk amili kimi rolunu öyrənmək olmuşdur. Tədqiqat illərində xəstələrin orta yaşı $65,2 \pm 0,9$ olmuşdur. Qadınlarla ($68,2 \pm 1,2$) müqayisədə kişilər ($62,2 \pm 1,3$) insultla daha cavan yaşlarda xəstələndirilərlər ($p < 0,001$). Kənd sakinləri insultla şəhər sakinləri ilə müqayisədə daha yaşlı dövrdə xəstələndirildilər. Xəstələrin çoxu insultla 50-59 və 70-79 yaş dövründə xəstələndirildilər. İshemik və hemorragik insult üçün orta yaş həddi müvafiq olaraq $65,8 \pm 0,9$ və $57,6 \pm 3,4$ olmuşdur.

Açar sözlər: insult, yaş, risk amili.

РЕЗЮМЕ

ВОЗРАСТНАЯ СТРУКТУРА БОЛЬНЫХ С ИНСУЛЬТОМ

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Целью данной работы явилось изучение возраста больных, в качестве фактора риска среди 173 больных инсультом, которые зарегистрировались в течение 3 лет (01.01.2007-31.12.2009) в Сиязанском районе Республики Азербайджан. Средний возраст больных инсультом в исследуемые годы составил $65,2 \pm 0,9$. Мужчины болели инсультом в более молодом возрасте - $62,2 \pm 1,3$ по сравнению с женщинами - $68,2 \pm 1,2$ ($p < 0,001$). Пациенты из сельских населенных пунктов болели инсультом в более пожилом возрасте по сравнению с городскими пациентами. Большинство больных страдали инсультом в возрастных группах 50-59 и 70-79. В первой возрастной группе мужчины, во второй женщины. Средний возраст для ишемического и геморрагического инсульта составили соответственно $65,8 \pm 0,9$ и $57,6 \pm 3,4$.

Ключевые слова: инсульт, возраст, фактор риска.

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