

Pharmacophore

ISSN-2229-5402

Journal home page: <http://www.pharmacophorejournal.com>



A STUDY OF RISK FACTORS FOR ISCHEMIC STROKE IN YOUNG ADULTS IN URMIA TOWN

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ARTICLE INFO

Received:

03th Jun 2017

Accepted:

29th Nov 2017

Available online:

14th Dec 2017

Keywords: serological and immunological tests, Ischemic stroke, dyslipidemia

ABSTRACT

Introduction: 3.5 to 5.5 million deaths annually occur due to stroke in developing countries. Youth ischemic stroke occurs in the 15 to 45 age group. This study aimed to examine the risk factors for ischemic stroke in young adults in Urmia Town in the years 2010 to 2012.

Method: this study is retrospective study in which 104 patients who were hospitalized due to stroke in the years 2010 to 2012 were studied. Patients' information, including age, gender, dyslipidemia, positive family history were extracted from their records and the data were analyzed using SPSS20 software.

Results: in present study, 15.4% of studied samples has family history, in terms of aPI Ab, 2.9% of them were abnormal and in terms of anti-dsDNA ab inflammatory factor, 1.9% of them were abnormal.

Risk factors for ischemic stroke: brain tumor (3.7%), blood disease (3.7%), pre-eclampsia (3.7%), DVT(3.7%), and Hyperhomocysteinemia (3.7%) and carotid artery stenosis with more than 75% narrowing (3.7%), vascular diseases (0.9%) and brucellosis (0.9%).

Discussion and conclusion: like similar studies, in present study, the most important factors causing ischemic stroke are hypertension, dyslipidemia, smoking and diabetes and it can be concluded that the results are consistent with the results of other studies and ultimately, a decision must be made to change the adults' life style to prevent ischemic stroke in young adults.

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To Cite This Article: Surena Nazarbaghi, Mohammad Reza Amiri-Nikpour*, Mohammad Sadigh Novin, (2017), "A study of risk factors for ischemic stroke in young adults in urmia town", *Pharmacophore*, 8(6S), e-1173111.

Introduction

Stroke is one of the most important health problems [1]. 800000 new cases of stroke annually occur in the United States of America [2]. More than two third of strokes happen in developing countries and average age of people who suffer stroke is 15 years less compared to developed countries [3, 4]. Ischemic stroke occurs in the 15 to 45 age group and 1% of all types of strokes and in specialized center, 12% of strokes are ischemic stroke [5]. In other words, 35000 new cases of stroke annually happen in people younger than 40 years [6].

Ischemic stroke is still introduced as the main cause of disability and death in the world [7]. In recent years, the mortality caused by stroke has been decreased but two third of them require the daily medical assistance [8].

After first ischemic stroke, patients are at risk of recurrent stroke. The incidence of stroke causes organ failure, disability and as its result, the patient sometime requires long-term care [9]. Recently, prevalence of stroke in young people has increased [10]. Stroke in young people has many harmful economic effects compared to older people because it disturbs useful years of their lives and on the other hand, the rate of cognitive disorders, depression, anxiety and suicide in these people is also higher [11, 12].

In some articles, the prevalence of stroke among the people younger than 35 years old in developing countries has been reported 19% and it was noted that in recent decades, the risk of stroke in people with low-middle income has been increased to 100% [13, 14].

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10 of 104 patients with ischemic stroke (9.6%) used medicines and 94 patients (90.4%) used no medicine.

Consumed medicines

Of 10 person who used medicine, 7 patients (70%) used warfarin, one of them used ASA+ phenytoin (10%), one of them used Valproic acid (10%) and one of them used ocp (10%).

Consumed medicine	frequency	percentage
Warfarin	7	70
ASA+ phenytoin	1	10
Valproic acid	1	10
ocp	1	10
total	10	100

Risk factors stated for ischemic stroke

Of the 104 patients, in 27 patients, risk factors for ischemic stroke were specifically reported: 6 patients (22.25%) with brain tumor, 15 patients (55.55%) without an underlying cause, 1 patient with blood disease (3.7%), 1 patient with pre-eclampsia (3.7%), 1 patient with DVT(3.7%), and 1 patient with Hyperhomocysteinemia (3.7%) and 1 patient with carotid artery stenosis with more than 75% narrowing (3.7%), 1 patient with vascular diseases and brucellosis (3.7%).

Table4. Absolute and relative frequency distribution of risk factors

Variable	Frequency	percentage
Acute Leukemia	6	22.25
No underlying cause	15	55.55
pre-eclampsia	1	3.7
DVT	1	3.7
Hyperhomocysteinemia	1	3.7
Carotid stenosis (75%)	1	3.7
Vascular problems	1	3.7
Brucellosis	1	3.7
total	27	100

Discussion And Conclusion

This cross-sectional- descriptive study aimed to examine the risk factors for ischemic stroke and to identify its factors in order to prevent it quickly and also to reduce its impact. As mentioned, ischemic stroke happens in the 15-45 age group. 1% of all types of strokes and in specialized center, 12% of strokes are ischemic stroke [5].

Risk factors and etiologic causes of stroke in young people are different compared to older people and prognostic factors discussed in the case of elderly patients, usually cannot be used for young patients.

Present study has been conducted on the 16-45 age group and in terms of gender, 43 of patients were men (41.3%) and 61 of them were women (58.7%) and female to male ratio was 1.43.

In a study by. [5], patients were in the 15-45 age group and female to male ratio was 1.3. So the result of present study is consistent with the result of their study.

In a retrospective study, it was concluded that the majority of male and female patients hospitalized due ischemic stroke were between 45-54 and 20-54 years old, respectively [18].

In present study, history of diabetes (14.4%), history of valve problems (9.6%), history of MI (5.8%), history of migraine (1%), hypertension (45.2%), history of dyslipidemia (27.9%), history of smoking (6.7%) were common risk factors in patients with ischemic stroke.

In a study by [5], smoking (59.3%) and dyslipidemia (41.1%) were the most common risk factors. Although there is significant difference between present study and their study in terms of percentage of dyslipidemia, they are consistent with each other in terms of risk factors involved in young ischemic stroke.

In a study by [7], it was reported that the most common risk factors were smoking (55.5%), physical inactivity (48.2%), hypertension (46.6%), dyslipidemia (34.9%), respectively. The results of present study are consistent with the results of their study although there is a difference between them in terms of the order of risk factors.

In a study by [8], physical inactivity (48.2%) was also examined but in present study it was not examined and it is recommended to examine it in future studies to make a decision about the change in life style.

Overweight and obesity are independent risk factors for stroke so that relative risks of overweight and obesity in ischemic stroke were 1.40 and 1.78, respectively and they were 1.25 and 1.80 in hemorrhagic stroke, respectively. Kefi A. et al. concluded that smoking, diabetes mellitus and family history of stroke are the risk factors for stroke in the youth [20].

In a study by Owolabi [4], risk factors were hypertension (74.7%), smoking (50.7%) and hypercholesterolemia (9.9%) and finally, it was concluded that according to the results, the incidence of stroke in young people was not rare as it was thought and in a study by Razzaq. [13], hypertension and diabetes were reported in 43% and 30% of patients, respectively. The result of present study is consistent with the results of both studies.

In a study by Tsong [21], 4 main factors were hyperlipidemia (53.1%), smoking (49.8%), hypertension (45.8%) and positive family history of stroke (29.3%). 23 patients (9.6%) had Carotid stenosis with more than 50% narrowing (7.5%) and vertebral artery (2.1%) and the most common cause of them was dissection.

After analyzing health statistics of 188 countries, it was found that most of deaths caused by stroke are related to modifiable behaviors (such as smoking, poor nutrition, low physical activity) and metabolic factors (such as systolic high blood pressure, body mass index, fasting blood sugar and total cholesterol and low glomerular filtration of kidney) and environmental factors (such as air pollution, lead exposure) are places at 2nd and 3rd places, respectively [22]. The risk of ischemic stroke in children and youth with congenital heart disease is 11 times higher than it in health people [23].

Finally, it can be said that the most important risk factors for stroke in people younger than 55 years old are smoking, hypertension, dyslipidemia, obesity, diabetes mellitus and cardiac embolic disease, respectively [24]. Increased levels of IL-6 and the size of the infarcted brain are of the most important factors affecting the prognosis of young patients with stroke [25]. The risk of cardiovascular disease in young patients with stroke will increase after the first attack, especially when the cause of stroke is cardiac embolism or large artery atherosclerosis [26]. As mentioned, despite the passage of a decade of stroke in young adults, there are the symptoms of depression and anxiety in most cases that the doctors must pay attention to this [27].

The most common factors for ischemic stroke are blood pressure, a history of dyslipidemia, diabetes, history of MI (9.6%) and history of smoking. Given that in present study, the physical activity and their sleep were not examined and there are few studies on factors causing ischemic stroke in adults, it is recommended to examine the change in life style in addition to physical activity and sleep of patients in future studies. Also, the average age of patients was not examined in present study and it can be examined in future studies along with the change in life style, physical activity, sleep, results of serological and immunological tests.

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