

Lifestyle Assessment in Young Adults with Ischemic Stroke: One Cross-Sectional Study in Iran

Abstract

Background and Aim: Lifestyle changes are associated with an increased incidence of stroke especially in young adults. The purpose of this study was to investigate the lifestyle of ischemic stroke cases under the age of 50 years. **Methods:** This descriptive cross-sectional study was conducted on young adults with ischemic stroke who were admitted to some hospitals, Tehran, Iran between 2018 and 2019. Total lifestyle information collected in the form then was compared in males and females. **Results:** Totally 11% ischemic stroke was under age 50 years. 60.7% of young adult patients were men. There was significant difference between body mass index (BMI) ($P = 0.03$), type of job ($P = 0.04$), physical activity ($P = 0.02$), fruit and vegetables consumption, and gender of patients ($P = 0.02$). **Conclusion:** According to the association between inappropriate lifestyle and ischemic stroke in young adults, it is recommended to set preventive medicine and health promotion units with insurance coverage in all clinics for risk assessment of stroke in healthy general population specialty young adults.

Keywords: Lifestyle, stroke, young adult

Introduction

Today, we are faced with a dramatic increase in the incidence of ischemic stroke in young adults under 50 years. The potential reasons for this increase could be lifestyle changes such as tobacco use at an early age, inadequate physical activity, unhealthy diet, stressful life, and the harmful use of alcohol.^[1] Generally, the incidence rate of ischemic stroke younger than 45 years old reported from 3.4 to 11.3/100,000 people per year in white populations.^[2] Stroke is the second leading cause of death in Iran. Unfortunately, due to the urbanization growth and the incorrect culture of inactivity, inadequate consumption of fruits and vegetables, as well as the high prevalence of processed foods and fast food consumption and high body mass index (BMI), risk of ischemic stroke in young adults is increasing in the Iranian community.^[3,4] Many important factors related to ischemic stroke are modifiable. Quit smoking, increased physical activity, and proper diet, so, controlled diabetes and hypertension as well known risk factors for stroke can be effective in reducing the rate of

stroke.^[5] The aim of this study was lifestyle assessment in patients with a stroke under age 50 years.

Methods

This descriptive cross-sectional study was conducted on patients with an ischemic stroke, >50 years, admitted in three subspecialty hospitals in Tehran, Iran between 2018 and 2019. We excluded all hemorrhagic stroke cases through CT scan¹ and MRI² results. We collected demographic characteristics (age, sex, BMI, job type as low or full stress, living area) and lifestyle habits such as cigarette and hookahs smoking, alcohol drinking, type of diet include low/moderate and high calorie (fat, sugar, and salt), fruit and vegetables, physical activity consist of no walking, walking <30 min/weekly, walking 30–90 min/weekly, walking >90 min/weekly, night sleeping (hours), and daytime nap. We asked past medical history such as hypertension and diabetes mellitus. All information was obtained from the patient or his entourage (self-reported). Informed consent was taken for participation in the

- 1 computed tomography scan
- 2 magnetic resonance imaging

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research. This study was approved by the ethical committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran (Ethical Code: IR. SBMU.RETECH.RECSd.1396.284). To report the results of descriptive analysis, mean \pm standard deviation (SD) and number (percent) used. Chi-square (Fisher exact) test for assessment statistical difference between categorical variables applied. All probability values were two-sided with the use of SPSS 18 and $P < 0.05$ was considered statistically significant.

Results

11% of ischemic stroke patients who were admitted in three hospitals were under age 50 years. 60.7% of young adult patients were men. The mean \pm SD age was 42.2 ± 7.55 and 44.45 ± 5.89 years in males and females, respectively. We found a significant difference between BMI and sex in this survey ($P = 0.03$). 78.3% of overweight young adults with ischemic stroke were male whereas 57.7% of obese patients were female. There was a significant difference between job type and gender. So that 52.5% of patients with the high-stress job were male ($P = 0.04$). Also, 55.6% of patients without any physical activity were female ($P = 0.02$). As well as fruits and vegetable consumption was lower in men significantly ($P = 0.02$). The rest of the statistical analysis was shown in Table 1. There was not difference between hookahs consumption and gender of patients statistically but this rate was clearly higher in men [Figure 1].

Discussion

In the current survey, 11% of ischemic stroke accrued in young adults. We assessed lifestyle in 56 ischemic strokes under 50 years. 60.7% of young patients were male. The mean \pm SD of age between males and females admitted with ischemic stroke was 42.2 ± 7.55 and 44.45 ± 5.89 years, respectively. Overall, the definition of the age cutoff for stroke in young adults is challenging but previously published papers commonly determined young adults as those younger than 45 or 49 years.^[5,6] Many lifestyle risk factors for the incidence of ischemic stroke are modifiable. Hypertension, hypercholesterolemia, diabetes mellitus, cigarette smoking, alcohol drinking, and hookah consumption are very important risk factors that are manageable easily.^[7] We found a high percentage ($n = 26$, 46.4%) of hookah consumption in young adults with ischemic stroke. Sadr in one article published in 2012 mentioned the prevalence of hookah consumption in Tehran was 29.7%.^[8] Wu in 2010 indicated smoking and alcohol consumption were strongly related to men, and heart disease also obesity were related to women's ischemic stroke.^[9] One study by Spengos in 2010 showed smoking (59.3%) and dyslipidemia (41.1%) were the most frequent risk factors for early stroke.^[10] Mitchell in 2015 showed an association between increased BMI so insufficient physical activity and early onset stroke, which is consistent with studies conducted in older adults.^[11] High daily dietary intake of fat is associated with obesity and may act as an independent risk factor or may affect

Table 1: Results of Chi-square analysis in young adults with ischemic stroke

Variables	Sex Number (Percent%)		P
	Male 34 (60.7%)	Female 22 (39.3%)	
Age			0.2
Mean \pm SD	42.2 \pm 7.55	44.45 \pm 5.89	
BMI			0.03 *
Normal	5 (71.4)	2 (28.6)	
Overweight	18 (78.3)	5 (21.7)	
Obese	11 (42.3)	15 (57.7)	
Living area			0.7
Capitals and big cities	28 (62.2)	17 (37.8)	
Suburban and rural areas	6 (54.5)	5 (45.5)	
Job type			0.04 *
Low stress	13 (61.9)	8 (38.1)	
Full stress	21 (52.5)	19 (47.5)	
Smoking			0.6
Yes	19 (63.3)	11 (36.7)	
No	15 (57.7)	11 (42.3)	
Alcohol drinking			0.7
Yes	9 (64.3)	5 (35.7)	
No	25 (59.5)	17 (40.5)	

Contd...

Table 1: Contd...

Variables	Sex Number (Percent%)		P
	Male 34 (60.7%)	Female 22 (39.3%)	
Hookah consumption			0.2
Yes	18 (69.2)	8 (30.8)	
No	16 (53.3)	14 (46.7)	
Illicit drug use			0.5
Yes	3 (50)	3 (50)	
No	31 (62)	19 (38)	
Diabetes			0.5
Yes	13 (56.5)	10 (43.5)	
No	21 (63.6)	12 (36.4)	
HTN			0.9
Yes	8 (61.5)	5 (38.5)	
No	26 (6.5)	17 (39.5)	
Diet			0.5
Low fat, sugar, salt (low-calorie regime)	3 (42.5)	4 (57.1)	
Moderate fat, sugar, salt (normal calorie regime)	7 (63.6)	4 (36.4)	
High fat, sugar, salt (high-calorie regime)	24 (63.2)	14 (36.8)	
Vegetables and fruits			0.02 *
Below 500 g daily	29 (69)	13 (31)	
500 g and more daily	5 (35.7)	9 (64.3)	
Physical exam			0.04 *
No	12 (44.4)	15 (55.6)	
Walking <30 min/weekly	1 (66.7)	3 (33.3)	
Walking 30-90 min/weekly	11 (91.7)	1 (8.3)	
Walking >90 min/weekly	5 (62.5)	3 (37.5)	
Night Sleeping			0.1
7 h	17 (56.7)	13 (43.3)	
8 h	11 (64.7)	6 (35.3)	
9 h≤	0 (0)	1 (100)	
Daytime nap			0.2
No or only occasionally	16 (69.6)	7 (30.4)	
Once or several times/day	18 (54.5)	15 (45.5)	

Statistical significance indicated by a star(*)

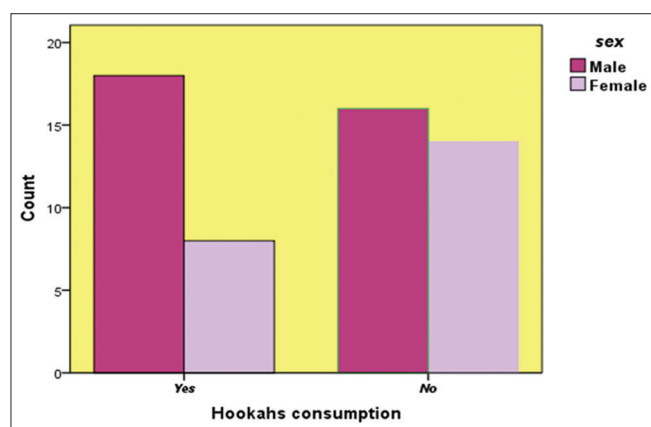


Figure 1: Difference between hookah consumption rate between male and female (69.3% vs 30.8%)

other stroke risk factors such as hypertension, diabetes, and hyperlipidemia.^[12] Some surveys worked on the effect of short- and long-nocturnal sleep duration on vascular disease such as stroke. They showed both excessive or insufficient sleep are independently associated with stroke. This association may be especially prominent at younger ages.^[13] The main limitation of this study was the low number of ischemic stroke cases in young adults could affect the results of the statistical analysis. It is recommended to set one data registration system for collecting total data ischemic stroke in young adults over time.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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