

CLINICAL CHARACTERISTICS OF STROKE IN DUHOK PROVINCE

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ABSTRACT

Background: Cerebrovascular accidents (stroke) are considered the second leading factor contributing to mortality and they are the third cause of disability. Stroke in low- and middle-income countries (LMIC) has doubled over the last four decades but little attention has been paid to this issue in this region.

Objectives: The distribution of stroke and its sub-type including pathologically ischemic (major vs. small vessel), intracerebral hemorrhage, subarachnoid hemorrhage and venous infarction and anatomically (anterior vs. posterior circulation), lobes localization were explored in this study.

Methods: In this large cross-sectional study, the patients who attended three general hospitals in Duhok governorate and were diagnosed with stroke and its types were included. The patients who attended the out-patient clinic of the hospitals were examined physically and clinically for the eligibility criteria.

Results: The mean age of the patients who were included in this study was 64.73 (SD: 12.55) ranged between 16 and 105 years. The mean BMI of the patients was 26.34 (SD: 3.90) with the dominant overweight population (40.8%) followed by normal weight (37.2%) and obese (21.4%). The study showed that most of the patients had hypertension (78.0%), dyslipidemia (63.1%) and sedentary lifestyle (52.9%). The prevalence of stroke subtypes was macrovascular stroke (48.7%), lacunar stroke (32.9%), ICH (15.7%), SAH (2.5%), and venous (0.2%). The prevalence of clinical risk factors was IHD (25.5%), past CVA (37.8%), and AF (25.4%). The study showed that patients with macrovascular and lacunar stroke were significantly older (65.80 and 65.84 years, respectively) compared to other stroke subtypes. The BMI of the patients with stroke subtypes was not significantly different, but the mean of all of them was overweight ($P=0.453$). The lowest rate of stroke subtypes was observed in patients with blood group O ($P=0.969$). The patients with T2DM ($P<0.001$) and dyslipidemia ($P=0.003$), and those patients with sedentary lifestyles ($P=0.034$). The prevalence of stroke subtypes was significantly more prevalent in patients without IHD ($P=0.046$) and those without past CVA ($P=0.017$). The prevalence of stroke subtypes was not significant between those patients with and without AF ($P=0.713$).

Conclusions: The present study showed that macrovascular and lacunar strokes were the most prevalent types of stroke in this region. The stroke subtypes were more prevalent in patients with overweight, diabetes mellitus, and hypertension.

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Keywords: *Prevalence; Risk factors; Stroke*

Cerebrovascular accidents (stroke) are considered the second leading factor contributing to mortality and they are the third cause of disability¹. Stroke is defined as the sudden death of some brain cells owing to a lack of oxygen when the blood flow to the brain is lost through blockage

or rupture or any artery to the brain. In addition, it is the leading cause of dementia and depression². Worldwide, 70% of strokes and 87% of both stroke-related mortalities and disability-adjusted life years happen in low and middle-c

The Stroke in low- and middle-income

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countries (LMIC) has been doubled over the last four decades. During the mentioned decades, the incidence of stroke has been reduced by 42% in high-income countries⁵. A stroke happens 15 years earlier in on average. Stroke is a contributing factor for a large number of mortalities in LMIC in comparison with high-income countries².

Stroke has similar risk factors as coronary heart disease and other vascular diseases. The risk factors are hypertension, elevated lipids, and diabetes. The risk factors related to lifestyle are smoking, low physical activity or unphysical activity, unhealthy diet, and obesity⁶. A combination of the mentioned above factors has been shown to be effective to reduce stroke mortality in LMIC^{7, 8}.

The persons who are at the peak of their productive life are more affected by stroke. Despite the large effect of stroke on the socio-economic development of countries, the crisis is growing in LMIC and little attention has been paid to this issue in this region.

The distribution of stroke and its sub-type including pathologically ischemic (major vs. small vessel), intracerebral hemorrhage, subarachnoid hemorrhage and venous infarction and anatomically (anterior vs. posterior circulation), lobes localization were explored in this study.

PATIENTS AND METHODS

Study design and sampling

We collected consecutively all types of stroke admitted to three qualified general hospitals. The stroke and its types were diagnosed by qualified neurologist or internists through the appropriate diagnostic criteria. The patients who attended the out-patient clinic of the hospitals were examined physically and

clinically for the eligibility criteria. The patients who met the eligibility criteria of stroke regardless of its types were included in the study. The detail medical and clinical history of the patients was documented during the patient's visit between February 2017 and June 2018. The settings which were included in this study Azadi (Duhok city) Zakho (Zakho city) and Gulan (Akre city) teaching hospitals.

Inclusion and exclusion criteria

The patients aged 16 years and older of both gender and regardless of the socio-demographic characteristics were eligible to include in the study. The patients who had available information to determine the subtype classification were included in the study. The patients who were included in this study were stroke/ transient ischemic attack (TIA) survivors. The patients who were diagnosed with primary intracerebral/subarachnoid hemorrhage and those who passed away or discharged from the hospital without inpatient admission were not included in this study. The patients who were referred to other clinics or were diagnosed with stroke mimic (e.g. migraine, subdural hematoma, brain tumor, and other nonvascular conditions) were not included as well.

Main Outcomes: Ischemic Stroke Subtypes
The main outcome which was recorded for the present study was the diagnosis of ischemic stroke subtype. The classification of stroke subtype was established according to the Subtypes of Ischemic Stroke Classification System⁹. The diagnosis of stroke subtype was based on the information obtained from the medical history, physical and clinical examination, and laboratory investigations. The patients were referred to additional tests as required. The patients should have a

carotid ultrasound and computed tomography and/or MRI. The final decision was made based on the critical review of the history, neurological examinations, and all test results⁹.

Additional Outcomes: Stroke Risk Factors

The additional outcomes which were recorded for this study were stroke risk factors. They were age, sex, diabetes mellitus, smoking status (categorized as smoker and non-smoker), plasma lipid (dyslipidemia), computed tomography and MRI, blood group, body mass index (BMI), hypertension, alcoholic consumption, sedentary lifestyles, and past CVA. BMI was categorized as <18.5 (underweight), 18.5-24.9 (normal weight), 25-29.9 (overweight), and ≥ 30 (obese).

Statistical methods

The descriptive purposes of the study were examined in frequency and percentage or mean and standard deviation. The correlation of marital status and mental health wellbeing and its dimensions were examined in the Pearson correlation. The predictors of marital satisfaction were examined in regression models. The null hypothesis was rejected in a P-value of less than 0.05. The statistical calculations were performed by Statistical Package for Social Sciences (SPSS version 25:00. The sample size is estimated based on the Slovin's Formula as follows:

Ethical considerations

The ethical approval of the present study was taken from the local health ethics committee in Duhok city. The participation in this study was optional and the guarantee was given to the subjects for the confidentiality of their personal information. Their right to not disclose the information was protected during data collection.

RESULTS

The mean age of the patients who were included in this study was 64.73 (SD: 12.55) ranged between 16 and 105 years. The mean BMI of the patients was 26.34 (SD: 3.90) with the dominant overweight population (40.8%) followed by normal weight (37.2%) and obese (21.4%) and the least percentage of underweight (0.6%) as presented in Table 1.

The study showed that most of the patients were determined in blood group A (43.6%) followed by B (36.9%) and AB (14.3%). In addition, the results showed that most of the patients had hypertension (78.0%), dyslipidemia (63.1%) and sedentary lifestyle (52.9%). The percentages of the patients who had T2DM and CVS were 35.9% and 25.5, respectively. Moreover, 34.0% and 8.8% were smokers and alcoholics, respectively (Table 1).

Table 1: General characteristic of patients with stroke

Patients' characteristic (n=635)	Mean	Sta. Deviation
Age (16-105 yrs.)	64.73	12.55
BMI (Range: 17-42)	26.34	3.90
	Number	Percent
Underweight	4	0.6
Normal Weight	236	37.2
Overweight	259	40.8
Obese	136	21.4
	Number	Percent
Blood Group		
Group A	277	43.6
Group B	234	36.9
Group AB	91	14.3
Group O	33	5.2
Hypertension	495	78.0
Type 2 Diabetes Mellitus	228	35.9
Smokers	216	34.0
Dyslipidemia	401	63.1
Alcoholic	56	8.8
Sedentary	336	52.9

The prevalence of stroke subtypes was macrovascular stroke (48.7%), lacunar

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stroke (32.9%), ICH (15.7%), SAH (2.5%), and venous (0.2%). The prevalence of clinical risk factors was IHD (25.5%), past CVA (37.8%), and AF (25.4%), as presented in Table 2.

Table 2: Prevalence of stroke subtype and related clinical risk factors

Stroke subtype and risk factors (n=635)	Number	Percent
Stroke Type		
Macrovascular stroke	309	48.7
lacunar stroke	209	32.9
ICH	100	15.7
SAH	16	2.5
Venous	1	0.2
IHD	162	25.5
Past CVA	240	37.8
AF	161	25.4

The study showed that patients with macrovascular and lacunar stroke were significantly older (65.80 and 65.84 years, respectively) compared to other stroke subtypes. The BMI of the patients with stroke subtypes was not significantly

different, but the mean of all of them was overweight (P=0.453).

The lowest rate of stroke subtypes was observed in patients with blood group O (P=0.969). The patients with T2DM (P<0.001) and dyslipidemia (P=0.003), and those patients with sedentary lifestyles (P=0.034). The significant difference in the prevalence of stroke subtypes was not found between males and females (P=0.437), between smoker and non-smokers (P=0.193). The study did not find a significant difference in the prevalence of stroke subtypes between patients with and without hypertension (P=0.115) but the majority of the patients were hypertensive in all stroke subtypes. Similarly, there was no significant difference in the prevalence of stroke subtypes between alcoholic and non-alcoholic patients (P=310), as presented in Table 3.

Table 3: Prevalence of stroke subtype in patients with different characteristics

Characteristics (n=635)	Stroke Subtype					P-Value
	Macrovascular stroke	lacunar stroke	ICH	SAH	Venous	
Age	65.80±11.82	65.84±12.46	61.02 ± 12.53	55.69 ± 14.67	16.00	<0.001*
BMI	26.30 ± 3.83	26.11 ± 3.95	26.99 ± 4.08	26.25 ± 3.09	25.00	0.453*
Underweight	2 (0.6)	1 (0.5)	1 (1.0)	0 (0.0)	0 (0.0)	0.843***
Normal Weight	119 (38.5)	80 (38.3)	31 (31.0)	6 (37.5)	0 (0.0)	
Overweight	121 (39.2)	89 (42.6)	41 (41.0)	7 (43.8)	1 (100.0)	
Obese	67 (21.7)	39 (18.7)	27 (27.0)	3 (18.8)	0 (0.0)	
Blood Groups						0.969**
Group A	132 (42.7)	94 (45.0)	46 (46.0)	4 (25.0)	1 (100)	0.437
Group B	118 (38.2)	73 (34.9)	35 (35.0)	8 (50.0)	0 (0.0)	
Group AB	44 (14.2)	31 (14.8)	13 (13.0)	3 (18.8)	0 (0.0)	
Group O	15 (4.9)	11 (5.3)	6 (6.0)	1 (6.3)	0 (0.0)	
Gender						0.115**
Female	170 (55.0)	115 (55.0)	49 (49.0)	11 (68.8)	0 (0.0)	0.115**
Male	139 (45.0)	94 (45.0)	51 (51.0)	5 (31.3)	1 (100)	
HTN						<0.001**
No	71 (23.0)	45 (21.5)	17 (17.0)	6 (37.5)	1 (100)	<0.001**
Yes	238 (77.0)	164 (78.5)	83 (83.0)	10 (62.5)	0 (0.0)	
DM						<0.001**

Characteristics (n=635)	Stroke Subtype					P-Value
	Macrovascular stroke	lacunar stroke	ICH	SAH	Venous	
No	178 (57.6)	132 (63.2)	81 (81.0)	15 (93.8)	1 (100)	0.193**
Yes	131 (42.4)	77 (36.8)	19 (19.0)	1 (6.3)	0 (0.0)	
Smoking						0.003**
No	214 (69.3)	130 (62.2)	61 (61.0)	13 (81.3)	1 (100)	
Yes	95 (30.7)	79 (37.8)	39 (39.0)	3 (18.8)	0 (0.0)	0.310***
Dyslipidemia						
No	120 (38.8)	76 (36.4)	26 (26.0)	12 (75.0)	0 (0.0)	0.034**
Yes	189 (61.2)	133 (63.6)	74 (74.0)	4 (25.0)	1 (100)	
Alcoholic						0.034**
No	277 (89.6)	190 (90.9)	96 (96.0)	15 (93.8)	1 (100)	
Yes	32 (10.4)	19 (9.1)	4 (4.0)	1 (6.3)	0 (0.0)	0.034**
Sedentary lifestyle						
No	144 (46.6)	86 (41.1)	58 (58.0)	10 (62.5)	1 (100)	0.034**
Yes	165 (53.4)	123 (58.9)	42 (42.0)	6 (37.5)	0 (0.0)	

Independent t-test, **Pearson Chi-squared, and *** Fishers' exact tests were performed for statistical analyses.

The bold numbers show a significant difference.

The study showed that the prevalence of stroke subtypes was significantly more prevalent in patients without IHD (P=0.046) and those without past CVA

(P=0.017). The prevalence of stroke subtypes was not significant between those patients with and without AF (P=0.713), as presented in Table 4.

Table 4: Prevalence of stroke subtype in patients with different clinical risk factors

Characteristics (n=635)	Stroke Subtype					P-Value
	Macrovascular Stroke	lacunar stroke	ICH	SAH	Venous	
IHD						0.046
No	218 (70.6)	156 (74.6)	84 (84.0)	14 (87.5)	1 (100.0)	**
Yes	91 (29.4)	53 (25.4)	16 (16.0)	2 (12.5)	0 (0.0)	
Past CVA						0.017
No	186 (60.2)	121 (57.9)	73 (73.0)	14 (87.5)	1 (100.0)	*
Yes	123 (39.8)	88 (42.1)	27 (27.0)	2 (12.5)	0 (0.0)	
AF						0.713
No	226 (73.1)	159 (76.1)	74 (74.0)	14 (87.5)	1 (100.0)	**
Yes	83 (26.9)	50 (23.9)	26 (26.0)	2 (12.5)	0 (0.0)	

*Pearson Chi-squared, and ** Fishers' exact tests were performed for statistical analyses.

The bold numbers show a significant difference.

DISCUSSION

The present study showed that macrovascular and lacunar strokes were the most prevalent subtypes of stroke. In addition, the study showed that overweight, hypertension, and diabetes

mellitus are the most prevalent risk factors of stroke subtypes.

The risk factors of stroke have been investigated in other studies in the literature. A research study conducted in

this region aimed to assess the parameters of metabolic syndrome in patients with stroke¹⁰. The study was performed among 950 patients who presented to the Neurology Ward at Azadi Teaching Hospital/Duhok in 2014. Of the patients who were included in study 392 (41.3%) including 254 females (64.8%) and 138 males (35.2%) met the eligibility criteria for metabolic syndrome. The patients had at least three or more risk factors of metabolic syndrome. The study found that the most prevalent risk factors of stroke were overweight/obesity (95.2%), hypertension (82.4%), diabetes mellitus (96.6%), and hyperlipidemia (51%). In addition, the most prevalent type of stroke was ischemic one (86%).

Another study evaluated the risk factors for ischemic stroke by its subtypes among 14448 men and women aged 45-64 years. The investigators included the subjects the Atherosclerosis Risk in Communities study. They ascertained the incidence of the disease from the hospital surveillance records. The individuals were followed-up for 13.4 years. The study showed that the incident ischemic strokes were lacunar (n=105), non-lacunar (n=326), and cardioembolic (n=100). The risk factors for stroke were waist-to-hip ratio, history of coronary heart disease, left ventricular hypertrophy, lipoprotein(a), and smoking¹¹.

The recent study focused on the assessment of risk factors, clinical presentations and predictors of stroke subtypes in LMIC¹². They conducted a prospective observational study in 2017. They found 116 persons who were diagnosed with stroke with a mean age of 55.1 (SD: 14.0 years). Based on the criteria of the World Health Organization (WHO) for the diagnosis of stroke, 51.7% of the

patients had ischemic and 48.3% had a homorganic stroke. The most common risk factors of the stroke were hypertension (75.9%), family history (33.6%), alcohol use (22.4%), smoking (17.2%), and heart failure (17.2%). The study found that atrial fibrillation is the independent predictor for hemorrhagic stroke.

The present study showed that most of the patients with different stroke subtypes have hypertension. Many persons who have a stroke have high blood pressure. Hypertension damages the arteries of the whole body and establishes some conditions where the arteries can burst or clot more easily. The weakened arteries in the brain lead to high blood pressure and consequently put a person at much more risk for stroke. Therefore, hypertension management is a key way to decrease the risk of having a stroke in¹³.

The stroke happens when a blood vessel to the brain is either blocked by a clot (called ischemic stroke) or bursts (hemorrhagic stroke). During the stroke, the part of the brain is no longer receives the blood and oxygen that it is required resulting in brain death. The stroke has an impact on patient thinking, movement, and function. It effects language, memory and vision, paralysis or mortality¹³. Hypertension is the single important risk factor for stroke. It is responsible for 50% of the ischemic strokes and also rises the risk of hemorrhagic stroke. It is so important to manage hypertension because it is diagnosed when significant damage has occurred in the blood vessels of the body¹⁴. A large number of studies have concentrated on the role of stroke in the development of stroke¹⁵⁻¹⁷.

The present study showed the lowest percentage of the stroke in patients with blood group O. a study conducted in 30239

persons using a case-control study design including 646 patients with stroke and 1104 healthy controls in the United States of America¹⁸. The study found that blood type AB is associated with an increased risk of stroke. New research reported the link between a non-O blood type and an increased risk of heart attack or stroke. The analysis of more than 1.3 million people found that the persons with blood types other than type O have a 9% higher chance of cardiovascular events¹⁹.

Strengths and limitations

The strong point of this study must be traced in the large sample size of the patients included in the study. In addition, a broad general and clinical risk factors were recorded for the study purposes. However, the causal pathway may not be examined in longitudinal investigations rather than cross-sectional types. In addition, the patients who were included in this study were selected from one geographical area and the findings may not be generalized to other regions across the country.

It is suggested that more attention be paid to the nutritional and clinical risk factors of stroke subtypes in this region.

Conclusions and recommendations

The present study showed that macrovascular and lacunar strokes were the most prevalent types of strokes in this region. The stroke subtypes were more prevalent in patients with overweight, diabetes mellitus, and hypertension.

It is recommended that more attention be paid to the early management of the patients with stroke since the disease has the risk of early recurrence²⁰.

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پوخته

تایبەتەندیی کلینیکی یێن جەلتا میشکی ل تاریزطەها دهوکی

پێشەکی و ئارمانج: رویدانی خۆبەندەمارێن میشکی (جەلتا میشکی) ل ریزبەندیا دوی دەین وەک فاکتەرێن سەرەکی بو مرنی و ریزبەندیا سیی وەک ئەگەرێ پەکەفتنی. لوه لاتین خودان ئابوری کیم بو نافین و د چل سالتین بوری دا جەلتا میشکی دوجار ئی هاتیە ئی هیشتا کیم پویته پی دەیتە دان ل فی دەفەری.

ئارمانج: دفی فەکولینی دا جەلتا میشکی وجوړین وی هاتنه دیارکرن و ژوان جوړین پاتولوژی وەکی جەلتا کیمگەهشتنا خوینی (خۆبەندەمارێن مەزن بەراورد دگەل یێن بجوړیک)، خۆبەندەریبون دناف میشکی دا، خۆبەندەریبون ل بن پەردا میشکی یا نافین و جەلتا خۆبەندەره، و جوړین ئەناتومی (جەلتین خۆبەندەمارێن پێشیا میشکی بەراورد دگەل یێن پاشیی) و جەلتە لدویف پارچە لوله یێن میشکی.

رێکێن فەکولینی: دفی فەکولینا مەزن یا پارچەیی دا ئەو نەخوشین هاتینه دەستنیشانکرن کو جەلتا میشکی وجوړین وی هە ل سی نەخویشانین گشتی یێن پارێزگەها دهوکی هاتنه بەشدارکرن. ل کلینیکی راورێکاری یێن نەخویشانا نەخوشت هاتنه پشکنیکرن ژلای جەستەیی وکلینیکی فە ژبو پیفەرین بەشداربوونی.

ئەنجام: تێکرای ژیی نەخوشین بەشدار دفەکولینی 64.73 سال بوو (لادانا ستاندارد 12.55 سال) و بمرودایی 16 حەتا 105 سال. تێکرای رێبەرێ سەنگا لەشی 26.34 بوو (لادانا ستاندارد 3.9) کو پتریا وان ژ تەخا زێدەسەنگ بوون (40.8٪) پاشی یێن نورمال (37.2٪) و لدویدا یێن قەلەو (21.4٪). دفەکولینی دا دیاربوو کو پرانی نەخوشتا بلندبوونا فشارا خوینی هەبوو (78٪) و ئالوزیین چەوری خوینی (63.1٪) و ستایی ژیا نا روینشتی یا کیم لقین (52.9٪). سەبارەت ریزا جوړین جەلتا میشکی بقی شیوەی دیاربوو: جەلتا خۆبەندەمارێن مەزن (48.7٪)، جەلتا لاکوینی (32.9٪)، خۆبەندەریبون دناف میشکی دا (15.7٪)، خۆبەندەریبون ل بن پەردا میشکی یا نافین (2.5٪) و جەلتا خۆبەندەره (0.2٪). فاکتەرێن مەترسی یێن کلینیکی بقی شیوەی دبلەلاقبوون: نەخوشین کیمگەهشتنا خوینی یێن دلی (25.5٪)، جەلتین بەری (37.8٪) و نەریکخستیا لیدانین دلی (25.4٪). فەکولینی دیارکر کو نەخوشین ژجوړی جەلتا خۆبەندەمارێن مەزن و جەلتا لاکوینی بشیوەکی بەرچااف دانەمرترن (65.8 و 65.84 سال لدویف ئیک) بەراورد دگەل جوړین دی ئی رێبەرێ سەنگا لەشی چ جیاوازیین بەرچااف نەبوون دگەل جوړین جەلتا هەر چەندە تێکرای هەمیا پیکفە زێدەسەنگ بوو ($p = 0.453$). کیمترین ریزا جوړین جەلتا هاتە دیتن دناف نەخوشین جوړی خوینا وان ($p = 0.969$) و هەقەندی دگەل هەندە فاکتەر بقی شیوەی هاتە دیتن: نەخوشتا شەکرێ جوړی دوی ($p > 0.001$) و ئالوزیین چەوری خوینی ($p = 0.003$) و ستایی ژیا نا روینشتی یا کیم لقین ($p = 0.034$). جوړین جەلتی بشیوەکی بەرچااف پتر دبلەلاقبوون ل دەف وان یێن نەخوشین دلی نەبووین ($p = 0.046$) و هەر وەسا یێن جەلتین بەری نەبووین ($p = 0.017$) ئی چ هەقەندیین بەرچااف نەهاتنه دیتن دگەل نەخوشین نەریکخستیا لیدانین دلی هە ($p = 0.713$).

دەرئەنجام: دفی فەکولینی دا دیار بوو کو مشەترین جوړی جەلتا میشکی لفی دەفەری جوړی جەلتا خۆبەندەمارێن مەزن و جەلتا لاکوینی یە. جوړین جەلتا میشکی پتر دەیتە دیتن ل دەف نەخوشین زێدەسەنگ و یێن ئیشا شەکرێ و بلندبوونا فشارا خوینی هە.

الخصائص السريرية للسكتة الدماغية في محافظة دهوك

الخلاصة

الخلفية: تعتبر الحادثة الدماغية الوعائية (السكتة أو الجلطة الدماغية) العامل الرئيسي الثاني للوفاة والسبب الثالث للإعاقة. تضاعفت معدلات السكتة الدماغية في البلدان المنخفضة والمتوسطة الدخل على مدى العقود الأربعة الماضية، لكن لم يتم إيلاء اهتمام كبير للمشكلة في هذه المنطقة.

الأهداف: استهدف البحث الى دراسة توزيع السكتة الدماغية وأنواعها الفرعية من الناحية المرضية كالسكتة الإقفارية (الأوعية الدموية الرئيسية مقارنةً بالأوعية الصغيرة)، والنزيف داخل الدماغ، والنزيف تحت الغشاء العنكبوتي، والاحتشاء الوريدي، ومن الناحية التشريحية (الدورة الدموية الأمامية مقارنةً بالخلفية) و تموقع الجلطة حسب فصوص الدماغ.

طريقة البحث: تضمنت هذه الدراسة المقطعية الواسعة المرضى الذين تم تشخيص إصابتهم بالسكتة الدماغية وبأنواعها في ثلاث مستشفيات عامة بمحافظة دهوك. تم فحص المرضى في العيادات الخارجية للمستشفيات جسدياً وسريراً لغرض تحديد معايير الأهلية لاشراكهم بالدراسة.

النتائج: تراوح عمر المرضى المشاركين بين 16 و 105 سنة بمعدل 64.73 سنة و بانحراف معياري 12.55. كان معدل مؤشر كتلة الجسم للمرضى 26.34 و بانحراف معياري 3.9 والأكثرية من فئة زيادة الوزن (40.8%) يليهم الوزن الطبيعي (37.2%) و من ثم فئة السمنة (21.4%). أظهرت الدراسة بأن معظم المرضى يعانون من ارتفاع ضغط الدم بنسبة 78% واضطرابات دهون الدم (63.1%) ويعيشون نمط الحياة المستقرة الخاملة (52.9%). كانت نسبة انتشار الأنواع الفرعية للسكتة الدماغية كما يلي: السكتة الإقفارية للأوعية الرئيسية (48.7%)، السكتة اللاكيونية (الجوبية) (32.9%)، النزيف داخل الدماغ (15.7%)، والنزيف تحت الغشاء العنكبوتي (2.5%) و من ثم الاحتشاء الوريدي (0.2%). وجدت عوامل الخطورة السريرية لدى المرضى كأمراض القلب الإقفارية بنسبة (25.5%)، السكتات الدماغية السابقة (37.8%) والرجفان الأذيني (25.4%). أظهرت الدراسة اختلافاً إحصائياً معنوياً من حيث العمر بالنسبة لأنواع السكتة الدماغية حيث كان مرضى السكتة الإقفارية للأوعية الرئيسية والسكتة اللاكيونية أكبر سناً (65.8 و 65.84 سنة على التوالي) من مرضى الأنواع الأخرى، بينما لم يوجد اختلاف معنوي مع مؤشر كتلة الجسم مع أن معدل هذا المؤشر للمرضى كان من فئة زيادة الوزن ($p = 0.453$). لوحظ أدنى معدل للأنواع الفرعية للسكتة الدماغية في المرضى ذوي فصيلة الدم 0 من دون أن تكون هذه العلاقة معنوية ($p = 0.969$). بينما وجدت علاقة إحصائية معنوية مع مرضى النوع الثاني من داء السكري ($p > 0.001$)، مرضى اضطرابات دهون الدم ($p = 0.003$) والعيش بنمط الحياة المستقرة الخاملة ($p = 0.034$). وعلى عكسه وجدت زيادة معنوية في معدل انتشار الأنواع الفرعية للسكتة الدماغية لدى من لا يعانون من أمراض القلب الإقفارية ($p = 0.046$)، و من ليس لديهم سكتات دماغية سابقة ($p = 0.017$) في حين لم تكن العلاقة معنوية مع الرجفان الأذيني ($p = 0.713$).

الاستنتاجات: أظهرت هذه الدراسة بأن أكثر أنواع السكتات الدماغية انتشاراً في هذه المنطقة هي السكتات الإقفارية للأوعية الرئيسية والسكتات اللاكيونية (الجوبية). كانت الأنواع الفرعية للسكتة الدماغية أكثر انتشاراً لدى المرضى الذين يعانون من زيادة الوزن و داء السكري وارتفاع ضغط الدم.