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RESEARCH ARTICLE

PREMATURE ONSET OF STROKE IN KHAT CHEWERS IN ADMITTED CASES TO ADEN HOSPITALS

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Abstract

Khat chewing is a common habit in Yemen and east African countries. Millions of people chew khat especially young adult male chew khat leaves daily for its euphoric and energetic effects and for the increase of alertness due to action of cathinone (amphetamine like substance) which lead to increase of blood pressure, heart rate and incidence of AMI. Khat use is widespread in some parts of Yemen, even among children. The prevalence of khat chewing has been estimated at 80% for males and 50% for females in the capital Sana'a at age fifteen and above. The aim of the study was done to earlier sage onset of stroke in khat chewing with relation to other risk factors of stroke. This study was conducted during the period from January 2022 to Jun. 2022, during which 150 patients admitted with stroke. The basic information was collected through special questionnaires for this purpose. The khat chewing group was 83 case compromised 55.3%. The study showed that there was a statistically significant relationship between khat chewing and the age group of less than 55 years age (P - 0.000).

Keywords: Khat chewing, Stroke amphetamine.

1. Introduction

Khat (Gat, Qat) chewing is been a part of culture for centuries in many countries in the eastern part of Africa and the Arabian Peninsula. Khat is the leaves of the plant Catha edulis chewed for its stimulant effect. It is produced in large quantities in Yemen, Somalia, and East Africa. [1] The pleasure derived from khat chewing is attributed to the euphoric actions of cathinone, a substance with sympathomimetic amine properties similar to amphetamine. [2] The consumption of the leaves was limited to the African continent for centuries as the stimulant effects are seen in only fresh leaves. Of later, the problem has spread to Asia, Europe, and American continents, courtesy airlift and preservation of freshness. [3] Long-term use of Khat has been attributed to development of psychotic symptoms

2. Subjects and Methods

2.1. Study population and Setting:

This cross-sectional study was carried out enrolled patients with stroke (n= 150) admitted at Aden hospitals (AL-Gamohoreheaa Teaching Hospital" as central hospital of Aden governorate) and other out specialist hospital as (AL-Wali hospital .AL -Naqeeb hospital, AL-Almani hospital, AL -Reyada hospital and Al-Borhi hospital)

Information was collected after inform of consent by questionnaire that included demographic data, including: (age & gender, and risk factors including hypertension, diabetic mellitus .dyslipidemia, smoking, family history of stroke and previous stroke

2.2. Statistical analysis:

The collected data was coded and entered in a data base file. After complete entry, data were transferred to the IBM SPSS statistics 27 version. The Chi-square test for categorical variables was used to find significant associations between patient's characteristics and Statistical tests were conducted at the $P < 0.05$ significance level.

3. Results:

3.1. Patients disposition:

In this study, a total of one hundred and fifteen stroke patient , 104 (69.3%) males and 46(30.7%) females were enrolled during a period of JAN 2022 to JUN 2022 in Aden hospitals . The average age of patient was divided in two groups, ≤55 years age group was 63(42.0%) and > than 55 years age group was 87(58.0%).

3.2. Distribution of stroke patients by risk factors

Table (1):

Risk factors	No	%
Khat chewing	83	55.3
Hypertension	81	54.0%
Diabetic	58	38.7%
Family history	29	19.3%
Smoking	46	30.7%
Previous stroke	24	16.0%
Total patient	**150**	**100.0%**

The distribution of risk factors, The khat chewing group was was 83 (55.3%) followed by hypertension which comprised 54.0%., diabetes 38.7% .then smoking 30.7%.while family history of stroke comprised 19.3% and previous stroke compromised 16.0%

3.3. Distribution of stroke patient by khat chewing and age

Table (2):

Age	khat chewers				Total	
	Yes		No			
	No	%	No	%	No	%
≤ 55	53	63.4	10	14.9	63	42.0
>55	30	36.1	57	85.1	87	58.0
Total	83	100	67	100	150	100
X2= 36.19 P value = 0.0000						

Most of cases in khat group presented below 55 years old which comprised 63 .4% and non khat group comprised only 14.9%. while the cases more than 55 years old higher in non khat group (85.1% vs 36,1% in khat group with p value statically significant

3.4. Distribution of stroke patients by khat chewers and risk factors

Table (3):

Risk factors	Age group				P value
	≤ 55		>55		
	No	%*	No	%*	
khat	53	63.9	30	36.1	.00000
Hypertension	23	28.4	28	71.6	0.030
Diabetic	22	37.9	36	62.1	0.424
Family history	7	24.1	22	75.9	0.030
Smoking	21	45.7	25	54.3	0.548
Previous stroke	2	8.3	22	91.7	0.0002
*Percentage was calculated from total of khat chewers and non khat chewers					

Most of cases of khat group presented below the age of 55 years old was 53 cases (63.3%) while 30 cases (36 .1%) presented above 55 years old with p value significant statically ,while other risk factors more was higher in age more than 55 years smoking (54.3% vs 45.3% ,diabetic 37.3% v s62.1% ,hypertension 28.4% vs71.6% .family history (24.1% vs 75.9) and previous stroke (8.3% vs 91.7%

4. Discussion

Khat use is widespread in some parts of Yemen, even among children. The prevalence has been estimated at 80% for males and 50% for females in the capital Sana'a at age fifteen and above [2]. Human imaging and postmortem examination, as well as laboratory animal models, suggest that stimulant drugs, such as amphetamines, might produce ischemic strokes by direct effects on the cerebral circulation, including cerebral vasospasm .[5] and vasculitis.[6, 7]

In our study from the total number of 150 cases of cerebral infarction we found that (83) cases of khat with cerebral infarction which represent 55.3% **%.**This is more than the same as previous study by Afaf R in Al-Gamohoria teaching hospital –Aden- 2006 41.8% .[8] , and Nawal et al 48 .5% 2017.[9] .Frequent increased annually of khat chewing complicated to stroke in our country interpreted as decreased awareness toward harmful effects of khat, in addition absent effort excreted by governorate on khat prevention program may be responsible for this increased

Drugs of abuse are also associated with stroke, especially in younger individuals**.** It has been shown that drug users, between 15 and 44 years old, were 6.5 times more likely to have a stroke compared with non-users.[10]. The major classes of drugs linked to stroke are cocaine,

amphetamines, heroin, morphine, cannabis, and the new synthetic cannabinoids, along with androgenic anabolic steroids, which are widely used both by professional and recreational athletes but also by the general public.

In our study 63.4% of khat chewing less than 55 age and non khat chewers were 14.9 % same as slwan et al.[11] in Washington and westever etal in united states [12]

5. Conclusions

According to present study the following facts can be concluded: the khat consider as independent risk factor of stroke with more predominate in age group less than 55 years bold

References

[1] N.Hassan, AA Gunaid, IM Murray-Lyon, "Khat (Catha edulis): Health aspects of khat chewing",*East Mediterr Health J.* vol.13 no.3 ,pp13:706–718, 2007.

[2] EJ .Pennings, A. Opperhuizen, JG .van Amsterdam. "Risk assessment of khat use in the Netherlands: A review based on adverse health effects, prevalence, criminal involvement and public order." *Regul Toxicol Pharmacol.* vol.52, no 3, pp199–207. 2008.

[3] AM.Feyissa, JP. Kelly. "A review of the neuropharmacological properties of khat.", *Prog Neuropsychopharmacol Biol Psychiatry*. vol .32, no 5, pp1147–1166 ,2008.

[4] A .Al-Motarreb, K. Baker, KJ .Broadley. "Khat: Pharmacological and medical aspects and its social use in Yemen." *Phytother Res*. vol .16, no.5, pp 403–413. 2002.

[5] AM .Wang, JN .Suojanen, VM .Colucci CL,Rumbaugh, NK. Hollenberg. "Cocaine- and methamphetamine-induced acute cerebral vasospasm an angiographic study in rabbits" American journal of neuroradiology,vol 11,no. 6, pp 1141-1146. 1990.

[6] S .Manchanda, MJ .Connolly. "Cerebral infarction in association with Ecstasy abuse", *Postgrad Med J*, vol. 69, no. 817, pp 874-879,1993.

[7] M .Halpern, BP. Citron. "Necrotizing angiitis associated with drug abuse. Am J Roentgenol Radium", *Ther Nucl Med*. vol. 111. no .4, pp 663-671. April1971.

[8] A. Gasem, M. A. Homam, "Study of Clinical Epidemiology ofIschemic Stroke patients admittedat Al-Gamhouria Teaching Hospital". (M.S. thesis,).University of Aden; 2008, page 85.

[9] N .Alashare, Y .A .Anes., "Predictor factors for early mortality after acute stroke patient admitted at Algamohorea Teatching Hospital Aden". (M.S. thesis).University of Aden; page 73, 2017.

[10] . M.A .Sloan. "Illicit drug use/abuse and stroke. Handb. " *Clin. Neol urol*.vol .93, pp 823–840. 2008.

[11] M .Sloan, S .Kittner, B. Feeser, J Gardner, A Epstein. "Illicit drug-associated ischemic stroke in the Baltimore-Washington Young Stroke Study." *Neurology;* vol. 50, no 6, pp1688-1693. 1998.

[12] AN .Westover, S. McBride, RW. Haley. "Stroke in young adults who abuse amphetamines or cocaine: a population-based study of hospitalized patients." *Arch Gen Psychiatry*. Vol .64, no. 4, pp 495-502. 2007.

مقالة بحثية

الإصابة المبكرة بجلطة دماغية عند ما ضغي القات في الحالات المرقدة في مستشفيات عدن

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المُلخّص

مضغ القات عادة شائعة في اليمن ودول شرق إفريقيا. يمضغ الملايين من الناس القات، وخاصةً الذكور اليافعين، يمضغون أوراق القات يوميًا لما له من آثار مبهجة وحيوية ولزيادة اليقظة بسبب عمل مادة شبيهة بالأمفيتامين (مادة تشبه الأمفيتامين) مما يؤدي إلى زيادة ضغط الدم ومعدل ضربات القلب.مضغ مضغ القات منتشر في بعض أجزاء اليمن حتى بين الأطفال. قُدِّر معدل الانتشار بنسبة 80% للذكور و 50% للإناث في العاصمة صنعاء في سن الخامسة عشرة وما فوق. الهدف من الدراسة هو تحديد بداية الإصابة بالسكتة الدماغية المرتبطة بالعمر في القات مع عوامل الخطر الأخرى. من السكتة الدماغية. أجريت هذه الدراسة خلال الفترة من كانون الثاني (يناير) 2022 إلى حزيران (يونيو) 2022، وتم خلالها دخول 150 مريضاً، وتم جمع المعلومات الأساسية من خلال استبيانات خاصة لهذا الغرض. أظهرت النتائج ماضغي القات بلغ عددهم 83 حالة بنسبة 55.3%. أظهرت الدراسة وجود علاقة ذات دلالة إحصائية بين مضغ القات والفئة العمرية الأقل من 55 سنة. نستنتج من هذا ان ماضغي القات عرضه لحدوث السكتة الدماغية في عمر مبكر يختلف عن بقية عوامل الخطورة الأخرى للسكتة الدماغية.

الكلمات المفتاحية: مضغ القات، السكتة الدماغية اميفيتامين.

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