Risk factors and Clinical Presentation of Stroke in Mukalla, Hadhramout, Republic of Yemen

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Abstract:

Background: Stroke is the third leading cause of death (after heart disease and cancer), and a major cause of long-term disability among survivors. Our country is lacking studies about stroke. Our study aim was to identify the risk factors, clinical presentation and outcome of stroke in our region Hadhramout, Republic of Yemen.

Patients and Methods: a retrospective cross-sectional study of stroke patients admitted at Ibnseena Teaching Hospital at Mukalla, Hadhramout, Yemen during the period January 2009-December 2010. Data were collected in a questionnaire from the patients' medical files.

Results: there were 774 stroke cases during the study period with age mean of (69±13.3) years; ischemic stroke represented 82.9% and the hemorrhagic type 17.1%. Males were 55.8%. Hypertension was the most common risk factor (57.2%) of cases, followed by diabetes mellitus (44.8%), smoking (20.9%) family history (13.4%), previous attack (10.6%) and dyslipidemia (8.7%). In 4.7% of cases there was no risk factors, 24.5% with one and 70.8% were with ≥2 risk factors. About 75% sake hospital within 24 hours, 90.6% with sudden onset, 61.4% were fully conscious and 38.6% with disturbed consciousness, 22.7% were confused and 15.9% were comatose. Dysphasia was in 31.8%. In-hospital death was 33.6% of cases. About one third of cases died in hospital.

Conclusions:stroke was slightly higher in males than females. Hypertension, diabetes mellitus and smoking were the most common risk factors, while dyslipidemia the least. In-hospital mortality was high and represented one third of cases. (Key words: stroke, cerebrovascular, CVA,)

Introduction:

Cerebrovascular accident (CVA) or stroke is defined as a rapidly developed global or focal neurological deficit lasting more than 24 hours or leading to death with no apparent cause other than vascular origin. (1). It is a common neurological disorder and is the third leading cause of death (after heart disease and cancer) (2), and a major cause of long-term disability among survivors (2, 3).

Stroke has many risk factors including: increasing age , male sex (4), hypertension (5), diabetes mellitus (6), smoking (7), hyperlipidaemia (8), previous attacks and family history (9).

Stroke can be either due to thrombo-embolic cause which leads to ischemia and cerebral infarction or bleeding leading to cerebral hemorrhage (10)

There are no data about the risk factors, types or clinical presentation in our region Hadhramout, Republic of Yemen. So our research aimed to determine the risk factors andclinical patterns of CVA in Ibnseena Hospital, Mukalla, Hadhramout.

Subjects and Methods:

This was a retrospective study of patients with CVA admitted in the medical ward at Ibn-seena Hospital, Mukalla, Hadhramout during the period between January 1st. 2009 and December 31st. 2010. Data were collected in a questionnaire from patient medical files. The questionnaire involved risk factors (age, sex, hypertension, diabetes mellitus, hyperlipidemia, smoking, previous attacks and family history), type of stroke, timing of hospital seeking, clinical presentation at admission and hospital outcome of submitted cases.

Inclusion Criteria: all patients admitted to the medical department at Ibnseena Hospital Mukalla Hadhramout under the diagnosis of CVA (stroke), ischemic and hemorrhagic, between January 1st. 2009 to December 31st. 2010.

For statistical analysis of the results, statistical package SPSS version 14 was used. Data is presented in Mean±SD and frequency.

Results:

Table (1) shows that, patients with CVA admitted to the Medical department at Ibnseena Hospital Mukalla Hadhramout between January 1st. 2009 and December 31st. 2010 were (774) cases, affected males were more than females (55.8% versus 44.2%) but with no significant difference. Ages were ranged (36-102) years, and mean (69.5±14.36) years. Age didn't show any significant difference between males and female patients although females were older than males (71 ± 12 versus 68 ± 15.8) years.

Figure 1 shows that most patients were elderly >60 years (73.9%), 25.1% of cases were middle-aged 40-60 years, while young cases <40 years accounted 1% only.

Table (2) shows thatmost patients were >60 years (73.9%), 25.1% of cases were middle-aged 40-60 years, while young cases <40 years accounted 1% only.

Hypertension was the most common risk factor (57.2%) followed by diabetes mellitus (44.8%) while the previous attack was the least common (1.2%) followed by hyperlipidaemia (2.5%). 4.7% of patients had no risk factors, 24.5% with one risk factors and 70.8% had two factors or more and the last group was significantly higher than both other groups, either separately or together (Table 3).

Clinically, Ischaemic CVA was more common (82.9%) than haemorrhagic type (17.1%). Sudden onset of the presentation was more common than gradual onset (90.6% and 9.4%) respectively. Left and right hemiplegia or hemiparesis accounted 55.7% and 44.3% respectively. Most cases (61.4%) reached hospital fully conscious, 22.7% with confusion and only 15.9% were in deep coma. Dysphasia appeared in 31.8% of cases. While 74.8% of cases sake hospital within 24 hours, 25.2% of them sake it after 24 hours as shown in table (4).

Table (1) General data of stroke patients admitted to Ibnseena Hospital Mukalla, Hadhramout, 2009-2010

	Males		Females		Total N=774	
No. of Patients	432	55.8%	342	44.2%	774	100%
Age (in years) • Range • Mean ± SD*	36-102 68 ± 15.8		44-96 71 ± 12		36-102 69 ± 13.3	

*SD   Standard deviation

Figure (1): age groups of CVA patients admitted to Ibnseena Hospital Mukalla, Hadhramout, 2009-2010
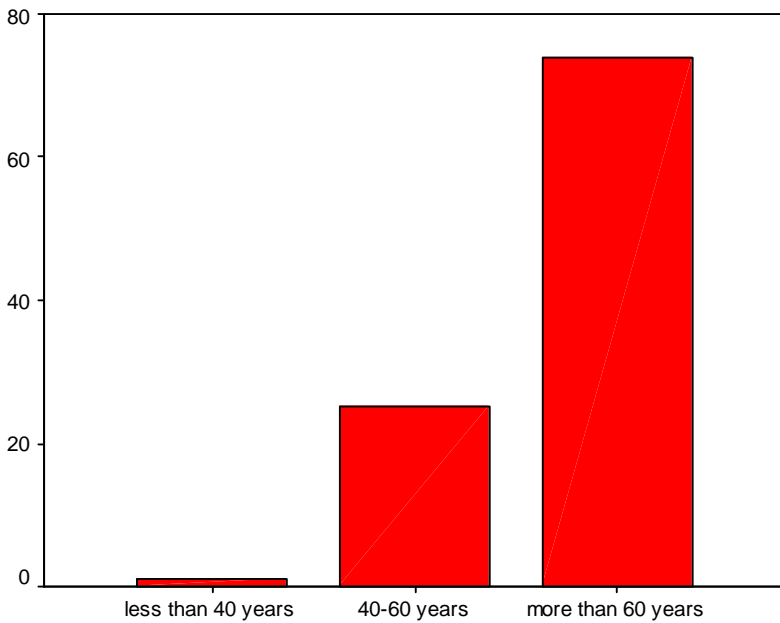
age groups

Table (2) Risk factors in Stroke patients admitted in Ibnseena Hospital Mukalla, Hadhramout, 2009-2010

Risk factor		No of patients N= 774	%
Hypertension	Hypertensive	443	57.2
Diabetes mellitus	Diabetics	347	44.8
Family history	Positive	104	13.4
Smoking	Smokers	162	20.9
Hyperlipidemia	Hyperlipidemic	67	8.7
Previous attacks	positive	82	10.6
No. of risk factors	No factor	36	4.7
	One factor	190	24.5
	≥Two factor	548	70.8
Total		774	100

Table (3) Clinical Data of stroke patients admitted in Ibnseena Hospital Mukalla, Hadhramout, 2009-2010

Item		No of patients N= 774	%
Timing of hospitalization	Within 24 hours	579	74.8
	After 24 hours	195	25.5
Type of stroke	Ischaemic	642	82.9
	Hemorrhagic	132	17.1
Onset	Sudden	701	90.6
	Gradual	73	9.4
Hemiplegia (paresis)	Left side	431	55.7
	Right side	343	44.3
Consciousness	Full conscious	475	61.4
	confusion	176	22.7
	Coma	123	15.9
Speech	Motor dysphasia	246	31.8
Total		774	100

Table (4) Comparison between Stroke types in patients at Ibnseena Hospital Mukalla, Hadhramout, 2009-2010

Risk factor N= 774		Ischaemic type No (%in the type)	Haemorrhagic type No (% in the type)
Age group (years)	<40	8(1.3%)	0 (0%)
	40-60	135 (21%)	59 (44.7%)
	>60	499 (77.7%)*	73 (55.3%)
sex	Male	353 (55%)	79 (59.8%)
	female	289 (45%)	53 (40.2%)
Hypertension	Hypertensive	313 (48.6%)	132 (100%)
Diabetes mellitus	Diabetics	284 (44.2%)	63 (47.7%)
Family history	Positive	97 (15.1%)	7 (5.3%)
Smoking	Smokers	121 (18.8%)	41 (31.1%)
Hyperlipidemia	Hyperlipidemic	53 (8.3%)	14 (10.6%)
Previous attacks	positive	82 (12.7%)	0 (0%)
No. of risk factors	No factor	36 (6.5%)	0 (0%)
	One factor	156 (24.3%)	34 (25.8%)
	≥Two factor	450 (70.1%)	98 (74.2%)
Consciousness level	Full conscious	446(69.5%)	29 (22%)
	Confusion	112 (17.5%)	64 (48.5%)
	coma	84 (13.1%)	39 (29.5%)
Total	N= 774	642	132

*p value <0.001   **p value <0.0001

Discussion:

Our study revealed that males were more affected than females which supports results from different regions in the world[(9), (11),(12), (13), (14)]. But in Africa, namely in Nigeria, the opposite was seen [(15), (16)] and this may be attributable to ethnic difference, Connor, et al.; (2009) in South Africa realized that stroke was common in white males than females and in black females than males (17) and the same findings were reported in United Kingdom by Hajat et al (2001) (18).

The mean age in our study was in the seven decade and this was consistent with a lot of works [(9), (14), (15), (16)]. Elderly people were the most common age group affected in comparisonwith younger and middle-aged group, the same findings were revealed bymany studies [(12), (13), (14), (16)].

Our study showed that hypertension was the most common modifiable risk factor of stroke (57.5%), earlier studies found that was ranging between 51% and 66% [(9) (12), (14), (18), (19), (20)]. Although in Iraq, Awad, et al.; (2010) (21) and in Iran Delbari, et al.; (2011) (22) found higher figures than the range (69% and 74.6% respectively). More recently, Tran and Mirzaei (2011)(23) realized that up to 60% of stroke in The

middle East and North Africa can be attributable to hypertension which was in the range of our study finding.

The second common risk factor found in our study was diabetes mellitus (44.8%), which was near to many studies done in Arab countries, in Saudi Arabia 37% (24), Iraq 41% (21), in Qatar 42% (25), and in Libya 44% (26), in Iran and Turkey it was ranged between 30-36% [(20), (27)], but in Italy it was 20% (28) and whole Europe 15.9% only (19), these may be attributable to lack of better glycemic control due to society and individual unawareness and / or poor primary health care in our country.

Smoking was the third common risk factor ofstroke; it accounted 20.9% of patients,many studies agreed with this findings in which the range was 17-25% [(9) (11) (16) (18) (19)].

Hyperlipidemia was also a risk factor of stroke in our study, but reported in 8.7% of patients only, and this agreed with Bornstein, et al.; (1996) (31), but Qari, (2000) in Saudi Arabia (9) and Desalu, et al.; in Nigeria (2011) (16) found lower figures (4% and 3% respectively) while in Iran, Ahangar et al.; (2005) (30), Azarpazhooh, et al.; (2010) (12) andDelbari, et al.; (2010) (20)reported higher figures (26%, 25% and 31%

respectively) and this may be due ethnic, dietary and social factors,

We found that there was 10.6% of patients had a history of previous stroke attack, which was agreed by many studies ranging between 7.4% and 13% [(31), (32), (33)].

Family history of stroke was one of the risk factors in our study as it appeared in 13.4% of patients, which is consistent with many studies [(31), (32), (33)].

In our study, 70.8% of patients were with ≥2 risk factors which was agreed with Awad et al.; (2010) (21), Desalu, et al.; (2011) (16) and Itrat, et al.; (2011) (34).

Also we found that most of cases were of ischemic stroke (82.9%) comparing to the hemorrhagic type (17.1%) which supports studies world-wide whose rangeswere 80-89% for ischemic stroke and 11-20% for the hemorrhagic one [(9), (12), (14), (21)].The onset of the disease in our study was (90.6%)which was consistent with Ghandari and Izadi-Mood (2007) (87.9%) (34).We found that 38.6% of cases presented with disturbed consciousness; and dysphasia appeared in our study in 31.8% of them which is agreed with a study done in Saudi Arabia by Qari (2000) (37.5% and 32% respectively) (9)

In-hospital mortality was 33.6%, Although Qari (2000) Saudi Arabia (9) and Ahangar et al. (2005) in Iran (30) showed similar figures, El-syed et al. (1999) in Saudi Arabia (32), Ghandehari and Izadi-Mood (2007) in Iran (35) and Khan et al. (2008) (36) in Qatar noted lower findings (10%, 7.3% and 9.3% respectively). Our higher mortality reflects the level of health care system as well as the lack of well-structured health education to fight risk factors.

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عوامل الخطورة والعرض السريري للصدمة الدماغية الوعائية في المكلا حضرموت

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الملخص العربي :

تعتبر الصدمة الدماغية الوعائية ثالث أسباب الوفاة بعد أمراض القلب والسرطانات، وهي أيضًا سبب من أسباب الإعاقة المزمنة. وبلادنا تفتقر إلى الدراسات حول هذا المرض. هدفت الدراسة إلى معرفة عوامل الخطورة التي من الممكن أن تؤدي إلى الإصابة بهذا المرض وكيف يكون العرض السريري له.

تصميم الدراسة : دراسة وصفية لحالات الصدمة الدماغية الوعائية التي تم إدخالها مستشفى بن سينا بالمكلا حضرموت خلال الفترة بين ١ يناير ٢٠٠٩م و٣١ ديسمبر ٢٠١٠م، وتم تجميع البيانات المطلوبة من الأرشيف الخاص بملفات المرضى بالمستشفى.

النتائج: خلال الفترة المحددة في الدراسة تم إدخال ٧٧٤ حالة الى المستشفى بعمر متوسط ٦٩ ± ١٣.٣ عاما وشكل النوع الفقاري منها ٨٢.٩٪ والنزيـ ١٧.١٪. كان الرجل من الحالات ٥٥.٠٪. أكثر عوامل الخطورة هو ارتفاع ضغط الدم (٥٧.٢٪) يليه داء السكري (٤٤.٨٪) ثم التدخين (٢٠.٩٪) والتاريخي العائلي (١٣.٤٪) التعرض السابق للمرض (١٠.٦٪) وارتفاع الكوليسترول (٨.٧٪). في ٤.٧٪ من الحالات لا يوجد أي عامل خطورة بينما ٢٤.٥٪ منهم لديهم عامل خطورة واحد والغالبية (٧٠.٨٪) يحملون أكثر من عامل للخطورة. حوالي ٧٥٪ وصلوا إلى المستشفى خلال ٢٤ ساعة من حدوث المرض، حوالي ٩٠٪ كان تطور المرض فجائي، ٦١.٤٪ بكامل وعيهم، و٣٨.٦٪ بوعي متأثر (منهم١٥.٩٪ في غيبوبة). تأثير الكلام كان في ٠.٨٪. أما الوفيات داخل المستشفى فقد كان ٣٣.٦٪ من الحالات .

الاستنتاجات: الصدمة الدماغية الوعائية أكثر عند الرجال مقارنة بالنساء. ارتفاع ضغط الدم وداء السكري والتدخين هي أكثر عوامل الخطورة التي تؤدي إليها. بينما ازدياد نسبة الدهون أقلها. الوفيات شكلت حوالي ثلث الحالات.