



Review of stroke in Diyala-Iraq

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Abstract

Background: Stroke is a major health problem worldwide because it is a common cause of mortality and a leading cause of adult long-term disability.

Patients and methods: This hospital-based cross-sectional study was conducted in Baquba teaching hospital for the period from 1st January 2016-1st September 2016 in Diyala- Iraq. The medical records of(640) patient were admitted with stroke to Baquba teaching hospital for this period were reviewed and data collected and analyzed. Patients' demographic data, stroke risk factors, type of stroke and final outcomes were recorded.

Results: A total of (640)patients were reviewed,(315)patient were males(49.2%)and (325)patient were females(50.8%).Mean age was(63 years),with age range (25-85year).Ischemic stroke found in(532)patient (83%), while intracranial hemorrhage was found in (108)patient (17%).Females had more ischemic stroke than males (44.7% vs 38.4%) , while males had more hemorrhagic stroke than females(10.8% vs 6.1%). The most common prevalent risk factor found in this study was hypertension (57.8%) followed by diabetes mellitus in(38.3%). fatality rate was 22.7%, (19% for males and 25.8% for females).

Conclusion: The incidence, risk factors and fatality rate of stroke in Diyala-Iraq is similar to other places in the world. And for prevention, the emphasis is on better control of hypertension diabetes mellitus and other risk factors to decrease the burden of stroke.

Keywords: Stroke, cross-sectional study, Iraq.

Introduction

Stroke is a major health problem worldwide because it is a common cause of mortality and a leading cause of adult long-term disability[1]. Stroke is the second most common cause of death in the world after ischemic heart disease (the third only when neoplastic diseases are considered as a group)[2].

An estimated 5.7 million people died as a result of stroke in 2005 and 87% of these deaths were in low-

income and middle-income countries[3]. Two-thirds of global stroke's deaths occurred in people living in developing countries[4].

The future burden of stroke is likely to increase in developing countries because of the combined challenges of demographic shift i.e. aging of the population, and increasing exposure to risk factors such as hypertension, diabetes mellitus and lifestyle changes[5].

Despite this, there have not been many epidemiological studies on stroke in Iraq[6]. No any study on stroke epidemiology and mortality in Diyala province in Iraq so the aim of this study is to determine the sociodemographic data, risk factors and fatality rate of stroke in this province.

Patients and Methods

This hospital-based crosssectional study was conducted in Baquba teaching hospital for the period from 1st January 2016-1st September 2016 in Diyala- Iraq. The medical records of(640) patient were admitted with stroke[who were diagnosed based on their clinical manifestations and imaging (magnetic resonance imaging or computerized tomography scan)] to Baquba teaching hospital for this period were reviewed and data collected and analysed. The mean age of the patients were(63 years) ,of them (315)patient(49.2%)were males and(325)patient

(50.8%)were females. Patients’ demographic data, type of stroke, risk factors, and final outcomes were recorded.

SPSS software for Windows (version 20, SPSS Inc.,Chicago, IL, USA) was used for the statistical analysis of the data.

Results

The total number of the patients with stroke were(640) patient,(315) were males(49.2%) and (325) patient were females(50.8%) with female:male ratio(1.03:1). The mean age of the patients was(63years), with age range (25-85year). Tow third of them aged >60year.

Males outnumbered females in all age groups except in age group(50-59) and >70year were females more than males and as shown in table(1).

Table(1): Age and sex distribution of the stroke patients.

Age	Male	Female	Total	%
<40	10	8	18	2.8
40-49	42	27	69	10.8
50-59	62	76	138	21.6
60-69	111	88	199	31
>70	90	126	216	33.8
Total	315	325	640	100%

Ischemic stroke form the majority of cases (532)patient (83%), while intracranial hemorrhage was found in (108)patient (17%).With females had more

ischemic stroke than males(44.7% vs 38.4%) , while males had more hemorrhagic stroke than females(10.8% vs 6.1%) , and as shown in table(2).

Table(2): distribution of the cases according to the type of stroke.

Stroke	Sex	Frequency	%
Ischemic	Male	246	38.4
	Female	286	44.7
	Total	532	83
Hemorrhagic	Male	69	10.8
	Female	39	6.1
	Total	108	17

The most common prevalent risk factor found in this study was hypertension (57.8%),while diabetes were

found in(38.3%) and previous stroke were found in (21.6%) and as shown in table(3).

Table(3): Distribution of risk factors among patients with stroke.

Risk factor	Male	Female	Total	%
Hypertension	148	222	370	57.8
Diabetes mellitus	102	143	245	38.3
Atrial fibrillation	8	11	19	2.96
Ischemic Heart disease	60	51	111	17.3
Previous stroke	66	72	138	21.6
Dyslipidemia	31	49	80	12.5
Smoking	73	10	83	12.96
Family history	8	7	15	2.3
Total	315	325	640	100

From those (640) patients who were admitted to the hospital,(145) (61 males and 84 females) died during admission period resulting in fatality rate of 22.7%, (19% for males and 25.8% for females).

Fatality rate was higher in hemorrhagic than ischemic stroke (27% vs 22%), with fatality rate more in females in both types of stroke than males (58% vs 42%) and as shown in table(4)and(5).

Table(4):Fatality rate according to the type of stroke.

Type of stroke	Patients number	Death number	%
Ischemic	532	116	22
Hemorrhagic	108	29	27
Total	640	145	22.7

Table(5):Distribution of dead patients according to the sex and type of stroke.

Stroke type \ sex	Hemorrhagic	Ischemic	Total	%
Male	11	50	61	42
Female	18	66	84	58
total	29	116	145	100

The fatality rate for both men and women increased with increasing age, but men stroke fatality exceeds

that of women only in the (60-69) age group and as shown in table(6).

Table(6): Distribution of the dead patients according to the age groups.

Age	Male	Female	Total	%
< 40	1	2	3	2
40-49	5	9	14	9.7
50-59	12	15	27	18.6
60-69	20	13	33	22.8
> 70	23	45	68	46.9
Total	61	84	145	100

Discussion

In this study the mean age of stroke patients were (63 year) with two third of them above (60 year) and this agree with most studies from Asia and developing countries such as a study done by El-Sayed and his colleagues in Saudi Arabia 1999 [7] which show mean age (62.8 year), and in another study done by Al-Rajeh and his colleagues also in Saudi Arabia 1993 [8] which show mean age (63 year) and another study done by Cheung and his colleagues in Hong Kong 2007 [9] which show mean age (71.1) year, and in a study done by Khan and Vohra in Karachi-Pakistan 2007 [10] which show mean age (62 year), and a study done by Dalal and her colleagues in Mumbai-India 2008 [11] which show mean age (66 year). But it is lower than that reported from western countries by a study done by Wolfe and his colleagues in Europe 2000 [12] which show mean age from three regions Erlangen- Germany; Dijon- France and London- United Kingdom (73.5, 74.1 and 71.9 years) respectively.

Our study show that female patients with stroke were slightly more than males (1.03:1) and this disagree with a study done by Al-Asadi and Habib in Iraq 2014 [13] which show male patients with stroke more than females (1.27:1). But agree with a study done by Daneshfard and his colleagues in Iran 2015 [14] which show females more than males (56.4% vs 43.6%).

In this study ischemic stroke was the main type and form (83%) of the cases and this agree with the study done by Al-Asadi and Habib in Basrah Iraq in 2014 [13] which show that ischemic stroke form (83.6%) of cases. And also agree with studies done by Hamad and his colleagues in Qatar 2001 [15], El-Sayed and his colleagues in Saudi Arabia 1999 [7] and Dalal and her colleagues in Mumbai-India 2008 [11]. Which show that ischemic stroke is the main type of stroke in (80%, 79% and 80.2%) respectively.

The most prevalent risk factors in this study were hypertension in (57.8%) followed by diabetes mellitus in (38.3%) and this agree with other studies from Basrah Iraq in 2014 [13] which show that hypertension was the most prevalent risk factor in (66.2%). Also hypertension was the most prevalent risk factors in many studies such as Hamad and his colleagues in Qatar 2001 [15], El-Sayed and his colleagues in Saudi Arabia 1999 [7], Daneshfard and his colleagues in Iran 2015 [14] and Dalal and her colleagues in Mumbai-India 2008 [11]. Which show hypertension in (63%, 40.4%, 61.1% and 82.8% respectively).

The 30-day case fatality rate of stroke differs in different parts of the world and range from (16%) in a study done by Kita and his colleagues in Japan 1999 [16] to (34.8%) in study done by Tsiskaridze and his colleagues in Georgia 2004 [17]. In our study the case fatality was (22.7%) and the fatality rate was higher in hemorrhagic than ischemic stroke (27% and 22%) respectively. This rate was lie in the international range (16%-34.8%). And this fatality rate was similar to that reported from Basrah Iraq in 2014 [13] which was (22.7%) and it's lower than that recorded by Oveisghran and his colleagues in Iran 2007 [18], Dalal and her colleagues in Mumbai-India 2008 [11] and Tsiskaridze and his colleagues in Georgia 2004 [17] which show fatality rate in (32%, 29.8% and 34.8% respectively). And this fatality rate was higher than that reported by Hamad and his colleagues in Qatar 2001 [15] and Al-Rajeh and his colleagues in Saudi Arabia 1993 [8] which show fatality rate (16% and 10%).

The fatality rate in women were found to be higher than men in this study (25.8% vs 19%) specially in age > 70 years. This agree with other studies done by Wang and his colleagues in Taiwan 2000 [19] which show fatality in females more than males (13.9% vs 12.6%), While another study done by Di Carlo and his colleagues in Europe 2003 [20] which show that sex did not reveal a significant effect on survival.

Conclusion

This study showed that the incidence, risk factors and fatality rate of stroke in Diyala-Iraq is similar to other places in the world. However, because stroke is a serious health problem, there is an urgent need to design a stroke registration system in Iraq for a better health planning. In addition, for prevention, our emphasis is on better control of hypertension diabetes mellitus and other risk factors to decrease the burden of stroke.

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