

Epidemiological Profile of Stroke in Patients Admitted to a Teaching Hospital, in Babil Governorate, Iraq

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Abstract. Stroke was considered as a high priority public health problem especially income countries including middle and low income Iraq. To investigate the epidemiologic characteristics of confirmed stroke patients admitted to Al Sadiq reference hospital in Babil governorate Iraq. This was a descriptive cross - sectional study, data were collected by using a semi structure questionnaire which included demographic characteristics questions and questions about comorbidities and other associated factors for diagnosed stroke cases, diagnosis depend on clinical picture and Computerized Tomography. Data collection was done by researchers through face to face interview after obtaining their informed verbal consents. Female to male ratio was (1.5-1), the mean age was (63years), most of patients were urban dwellers. The majority of participants had low educational level; Ischemic stroke constituted (51.9%). Hypertension was associated with (70.9%), diabetes mellitus was second comorbidity associated with stroke (40%), while (30.4%) of them gave a previous history of stroke among the study group, about 38% were ether current tobacco smokers (11.39%) or ex-smokers (26.6%). Stroke was common serious problem in Iraqi males, the most common associated comorbidities among stroke patients are hypertension, diabetes, and previous stroke. Prevention measures at different levels are strongly requested.

Keywords: stroke \cdot epidemiological profile \cdot associated factors \cdot hospitalized patients Babylon \cdot Iraq

1 Introduction

Stroke is a neurological lesion which takes place rapidly and continues more than one day the cause due to vascular defects [1, 2]. Globally stroke considered the third leading cause of mortality [3].

This disease has a serious burden on the community due to its serious consequences, social, psychological, physical as well as the financial burden [4, 5]. The disease burden is high in well-developed high income countries ranking the third cause of morbidity burden [6, 7]. A considerable health care financial allocation goes to stroke in European countries [8]. There are two main types of stroke ischemic type and due to interference of blood flow, and the hemorrhage one that lead to death of brain tissue [9, 10]. The

Corona virus epidemics in both developed and under developed countries have worsen the care for stroke patient [11]. There are both modifiable and non-modifiable Potential risk factors for stroke which depend on its type. Mainly, potential risks for ischemic type are non-modifiable risk factors such as aging, gender, presence of positive family history of stroke [1, 2, 9, 10].

While risk factors for hemorrhagic type includes; progressing in age, arterial hypertension and diabetes mellitus among other [1, 10].

The current study was done to explain the epidemiologic profile and the the associated risk factors among sample of stroke patients admitted to referral hospital in Babil governorate- Iraq. A local recent study concluded that nursing knowledge and practice in Iraq are not satisfactory regarding stroke care [12].

2 Methodology

This was a descriptive snap shot - study, the study site was Alsadiq teaching reference hospital which included 440 beds, and stroke unit, the period of study started from the first of September through the end of December 2022, data gathering were done single handy by the researchers using a semi structure questionnaire adopted from other studies, this data collection tools included questions about demographic characteristics and data about other associated factors, the convenient sample included confirmed stroke patients, diagnosed by consultant neurologists by clinical picture and Computerized Tomography and MRI. Data collection was carried out by researchers through face to face interview of patients and or their companions after obtaining their informed verbal consents. Data analysis was done using SPSS version 21, chi square and t test, statistical test were used to identify the relationship between variables, p value < 0.05 considered significant in this study.

3 Results

The majority of the participants included in this study were males (60.8%) and the Mean age of the participants was $63.22 (\pm 15.33)$ years. Up to 72.2% of the participants were unemployed.

20.3% were retired and only 7.6% were employed. Around 40.5% of the participants reported that their monthly income was not enough. Most of participants (59.5%) were from urban areas. Regarding Comorbidities, up to 70.9% of the participants reported suffering from hypertension. 43% of them suffered from diabetes Mellitus and 30.4% of them suffered from past strokes. Around 11.39% of the participants were current smokers. Up to 26.58% quit smoking after stroke. Only 70.9% of the participants have been on anti-hypertensive drugs medications beforehand. More than halve of them 51.9% of the study group had ischemic strokes and 48.1% of them had hemorrhagic strokes. See Table 1.

Around 40.5% of the total study group were illiterate. Whereas only 15% of them had diploma degrees or higher. See Table 2.

Characteristic	Parameter	Ν	%
Age (years)	(mean, ±SD) 63.22		±15.33
Gender	Male	48	60.8
	Female	31	39.2
Employment status	unemployed	57	72.2
	Employed	6	7.6
	retired	16	20.3
Monthly income	Not enough	32	40.5
	enough	47	59.5
Residence	Rural	32	40.5
	Urban	47	59.5
Comorbidities	hypertension	56	70.9
	Diabetes Mellitus	34	43
	Past stroke	24	30.4
	Other	22	27.8
Smoking	Current smokers	9	11.39
	Ex-smokers	21	26.58
Past COVID infection		16	20.3
COVID vaccinated		16	20.3
Have been on Hypertensive medications		56	70.9
Stroke Type	Ischemic	41	51.9
	Haemorrhagic	38	48.1

Table 1. Base line characteristics of patients with stroke (N = 79)

 Table 2. Educational level of the study group

Education	Ν	%
Illiterate	32	40.5
Literate	10	12.7
primary school	9	11.4
intermediate school	8	10.1
high school	8	10.1
Diploma or higher	12	15.2
Total	79	100.0

	Gender	Ν	Mean	Std. Deviation
age	Male	48	61.60	15.525
	Female	31	65.71	14.929

 Table 3. Mean age of the study sample by gender.

 Table 4. Stroke types among hypertensive participants.

			Hypertensi	Hypertensive	
			No	Yes	
stroke type	Ischemic	Ν	10	31	
		%	45.5%	55.4%	
	Haemorrhagic	Ν	13	25	
		%	54.5%	44.6%	

The Mean age of males participating in this study was $61.6 (\pm 15.252)$ years. And the Mean age of females was $65.71 (\pm 14.929)$ years. (p = 0.042). In this study, 55.4% of the participants who suffered from ischemic stroke were Hypertensive (Table 3).

Compared to 44.6% of those who suffered from hemorrhagic stroke See Table 4.



Fig. 1. Hypertensive participants in the study group



Fig. 2. Mean age of the participants according to gender



Fig. 3. Types of stroke among participants

4 Discussion

The findings of this study reveals that the mean age of stroke patients is (63.22year) this findings goes in line with finding of other local study conducted in Erbil governorate –Iraq [13] as well as other studies [14]. The educational levels of stroke patients are low among our patients, this association is similar with other studies which considered poor education as risk factor of stroke [15, 16] (Fig. 1).

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In the current study males are predominant, this finding is similar to finding reported by other studies [17–19], this may be explained by the fact that the modified risk factors are more among males compared to females such as tobacco smoking, alcohol and illicit drugs use as well as hazardous occupational exposures and the high prevalence of chronic diseases such as diabetes atherosclerosis and smoking low se-rum vitamin D [19, 20], but this result disagrees with other studies [21, 22]. The ischemic type of stroke in this study outnumbered the hemorrhagic type, this agrees with what was reported by [23] who found that (69.4%) of strokes were ischemic. In addition, similar local studies supported this finding [22, 24] (Fig. 2).

High arterial blood pressure is commonest disease associated that was posi-tively associated with stroke followed by diabetes mellitus and having previous history of stroke with stroke, this related to the high prevalence of these chronic diseases among Iraqi people including Babil dwellers [25] (Fig. 3).

The association between stroke and hypertension may reflect the high prevalence of hypertension among Iraqi people including Babylon governorate dwellers [25], this associations go with the findings reported by other researchers [23] and [15] who found that the prevalence of high arterial blood pressure was high among stroke patients while the prevalence of hypertension was less in China [16]. Diabetes mellitus was correlated with stroke in this study and this supported by the findings of with [24] but disagrees with the findings of other studies [16, 23].

Stroke prevention and management can be done through utilizing new approaches of health problem solving similar to other countries within the available resources [26]. Community health management program can be used in our primary health care centers (District Team Problem Solving approach which was proved to deal with health problems like stroke [25].

5 Limitations of This Study

This study has some limitations mainly in its generalization ability small convenient sample size. Large scale studies, could be helpful for gathering more comprehensive data to address this serious health problem.

6 Conclusion

Males were predominant, ischemic type of stroke constituted more than half of the sample, high arterial blood pressure, diabetes mellitus and having previous stoke are the main associated factors among stroke patients, the majority of patients have low educational levels.

7 Recommendations

- Further large scale analytic studies are requested.
- Continues medical and nursing education are needed for health care providers.

• Effective Educational Campaigns for the public about prevention of the risk factors of stroke, this can be done by community health nurses in the primary healthcare centres or through medias.

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