English abstract for paper

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عنوان البحث باللغة الانجليزية:

Prevalence of Stroke in Fayoum Governorate, Egypt: A Community-Based Study

عنوان البحث باللغة العربية:

معدل انتشار الجلطة الدماغية فى محافظة الفيوم – مصر: دراسة مجتمعية

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Background: Stroke is a highly prevalent disease with consequent mortality and morbidity. Few community based studies have been conducted only in upper Egypt to estimate prevalence of stroke. **Objectives**: This study was designed to find out the prevalence of stroke in Fayoum Governorate & to study some associated risk factors. **Methods**: through this community based cross-sectional study 4784 participants aged more than or equal to 18 years old were enrolled. A multi-stage random sample technique was followed to choose the study sample. A predesigned interviewer-administered structured questionnaire was used. Suspected stroke case by screening questionnaire was referred to the neurologist. **Results**: The Crude prevalence of stroke was 16 out of 1000 with confidence interval of proportion (12.6%-19.7%). The age adjusted local (Fayoum 2017 census) prevalence rate was 7.97 out of 1000, age adjusted prevalence rate (Egypt population 2017) was 1.05 out of 1000. Age-adjusted World Health Organization standard world population prevalence rate was 1.69 out of 1000. The crude prevalence of ischemic stroke was significantly higher than hemorrhagic stroke 11.9 versus 3.9 out of 1000 population. The most prevalent risk factor was smoking among males, followed by obesity then hypertension. The prevalence of stroke was significantly higher among participants affected with hypertension, diabetes, heart diseases, obesity, and smoking. Logistic regression analysis showed that having hypertension, diabetes, heart diseases, atrial fibrillation, obesity, and smoking were reported risk factors of stroke. **Conclusions**: The prevalence of stroke in Fayoum governorate was 1.6%. Hypertension, diabetes, heart diseases, obesity, and smoking were reported risk factors of stroke.

Key Words: Stroke—prevalence—Fayoum Governorate—risk factors—screening

مقدم البحث **توقيع مقدم البحث**

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English summary for paper (2)

Prevalence of Stroke in Fayoum Governorate, Egypt: A Community-Based Study

المشاركون في البحث: .أ.د/ هالة عبد المجيد شاهين أ.م. د/ وفاء يوسف عبد الواحد **أ.م. د/ شربات ثابت حسنين**

[1] استاذ الامراض العصبية – كلية الطب - جامعة الفيوم ،[2] استاذ مساعد صحة عامة وطب مجتمع –كلية الطب - جامعة الفيوم ، [3] استاذ مساعد بقسم تمريض صحة المجتمع كلية التمريض جامعة الفيوم.

Introduction

Stroke is a highly prevalent disease. According to the World Health Organization (WHO), around 15 million people, worldwide, suffer from stroke each year. Among those, 5 million die and another 5 million are permanently disabled. Four out of five strokes occur in the low- and middle-income countries.1 Stroke has been shown to be a major cause of death and disability in all societies irrespective of communities (industrial, agricultural, urban, or rural) which have been studied.2,3 The incidence of stroke rapidly increases with age, doubling for each decade after age 55.4 Among adults ages 35-44, the incidence of stroke is 30-120 of 100,000 per year, and for those ages 65-74, the incidence is 670-970 of 100,000 per year.5 Approximately 800,000 primary (first-time) or secondary (recurrent) strokes occur each year in the United States, with the majority being primary strokes (roughly 600,000). Of these strokes, approximately 87% are ischemic infarctions, 10% are primary hemorrhages, and 3% are subarachnoid hemorrhage.6 The Prevalence of stroke in European countries and United States ranged from 1.5% in Italy to 3% in the UK and United States.7 In Asian countries, prevalence of stroke has been reported in the range of 45-471 per 100,000.8 In Arab countries, Tunisia has reported the lowest figures 42 per 100,000. In Saudi Arabia the reported prevalence was 186 per 100,000.9,10 Four previous community based studies have been conducted in upper Egypt to estimate prevalence of stroke. The first study was in Assiut Governorate (Nile Valley) where the age adjusted prevalence rate was 699 of 100,000. The second one was in the Al-Kharga district, New Valley, the crude prevalence rate was 566 per 1000 population. The third one in Al-Quseir district with a crude prevalence rate of 655 of 1000. The fourth was done in Qena Governorate a crude prevalence rate 922 of 100,000, an ageadjusted local prevalence rate of 777 of 100,000, and an age-adjusted prevalence rate of Egyptian population 566.6 of 100,000.11-14 Fayoum Governorate, lying in Middle Egypt, about 100 kilometres (62 miles) southwest of Cairo. The total population of Fayoum is 3,170,150 inhabitants in January, 2015 with 22.5 % urban and 77.5 % rural population, according to Central Agency for Public Mobilization and Statistics. Fayoum governorate was divided into 6 districts: (Fayoum, Etsa, Tamiya, Sinnuris, Youssef Sadiek, Abshoay). Each district is composed of groups of villages representing Fayoum rural area. The main capital of governorate is Fayoum city which is considered an urban area.15 Up to our knowledge, no previous studies had been conducted to look for prevalence of stroke in Fayoum Previous studies have identified several risk factors for stroke.16,17 These risk factors are classified as, nonmodifiable or modifiable. Nonmodifiable risk factors serve as markers for high stroke risk, whereas modifiable risk factors are amenable to intervention for lower stroke risk.16 Recently, a case-control study of 3000 stroke cases, and matched number of controls, demonstrated that roughly 90% of strokes could be explained by 10 risk factors: (1) hypertension, (2) diabetes, (3) cardiac causes, (4) current smoking, (5) abdominal obesity, (6) hyperlipidemia, (7) physical inactivity, (8) alcohol consumption, (9) diet, and (10) psychosocial stress and depression.

Aim of the study:
This study aimed to find out the stroke prevalence and to estimate age-specific prevalence of stroke in Fayoum Governorate and to study some associated risk factors. Estimation of stroke frequency in Egyptian populations in different governorates may help in providing evidence to formulate a strategy that control stroke in Egypt

Methods
Study Design and Setting This was a community-based, cross-sectional descriptive study. It was implemented in Fayoum Governorate
Sampling Technique
A multistage, stratified systematic random sample was followed to choose the study sample. First 2 districts; Fayoum and Sinoris districts; were randomly selected out of 6 districts of Fayoum Governorate. Fayoum district the main and biggest district. It has characteristics of urban and rural population as it is surrounded by villages. Sinoris district has characteristics of rural population. Second in each district 1 allying village was selected; Benisaleh in Fayoum district and Matrtars village in Senoris, in addition to 2 urban areas in Fayoum city (Keman Fares around Fayoum university hospital and El Hadka) Third; in any of sampling sites the main street was selected then go forward in 1 direction. Fourth, the first house was chosen randomly and then every third house. Eligible study participants were all residents in the selected houses who aged more than equal to 18 years and agreed to participate in the study. If family refused to participate in the survey, we replace it with the family next door.

Data Collection Tools
A predesigned interviewer-administered structured questionnaire was developed and composed of 2 parts the first part recorded some sociodemographic data (age, sex, and residence) and included some risk factors (smoking habits, medical history of diabetes, hypertension, and heart diseases including atrial fibrillation[AF]), physical measurements of weight, height, and resting blood pressure. Second part included a stroke screening questionnaire that was developed after review of literature and previous research conducted by Khedr et al14 This questionnaire was applied to individuals aged more than or equal 18 years old. The participants were interviewed directly, if they were mentally impaired, relatives or their caregivers answered questions

Results

Through this study 4784 participants of 961 households were enrolled. The mean age of the study group was 36.98. The rural residents represented 64.8%. The percent of smokers was 35.3% and all are males. Obese participants represented 28.8 %. The prevalence of diagnosed hypertension, diabetes, and heart diseases among study group was 21.2%, 18%, and 4.5%, respectively, 82 were identified as positive on the survey questionnaire, out of them 74 cases were identified positive after reassessment by neurologist and neuroimaging (brain CT or MRI). The crude prevalence of stroke among study group was 16 per 1000 with a confidence interval of proportion (12.6-197/1000). The age adjusted local (Fayoum 2017 census) prevalence rate was 7.97/1000 age adjusted Egypt population (census 2017) prevalence rate of 1.05/1000. Age-adjusted world standard world population prevalence rate of 1.69/1000. In general, the prevalence rate increased with increasing age with the highest prevalence in the

age more than 75 years old .The prevalence of stroke was significantly higher in males than females (20 out of 1000 versus 12 out of 1000. No significant difference in the crude prevalence rate of stroke between urban and rural residents

Conclusion

The prevalence of stroke in Fayoum governorate was 16 of 1000. The crude prevalence of ischemic stroke was significantly higher than hemorrhagic stroke. Hypertension, diabetes, heart diseases, obesity, and smoking were reported risk factors of stroke.

مقدم البحث **توقيع مقدم البحث**

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