

ENDORSEMENT

Thesis title:

“Stroke risk factors in Hebron city- Al Ahli Hospital”

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Abstract:

This is a case control study, to identify the stroke risk factors, and their frequency in Hebron City. Questionnaire and lab tests were used to collect data from patients whom were chosen randomly, from the medical files at Al Ahli hospital in Hebron City. The study included 80 subjects who were inhabitants of Hebron. These were divided into 40 cases and 40 controls. The cases were matched for age, sex, and residency. The age of the subjects ranged from 50 to 87 with mean age of 67.4 years, 60% of them were above the age of 65, and males formed 55% of the sample. A history of stroke in relatives (father, mother, sister, brother, uncle, aunt, grand father or mother) was found in 45% of cases, compared to 25% in controls, OR. (2.455), CI (0.950 – 6.339). Of the 36 female participants in the study 22.2% of the cases reported use of contraceptives throughout their life, compared to 11.1% in controls, OR. (2.29), CI (0.362 – 14.431). According to the BMI (Body Mass Index) 46.7 % of cases and 33.3 %of controls, were found to be overweight, OR (1.750), CI (0.616 – 4.973). 55% of the cases and 27.5% of controls, experienced mild or temporary hemiparasis or numbness in one upper or lower limb or both, on one side of the body, OR (3.22), CI (1.268 – 8.188). A history of hypertension was reported in 45 % of cases and in 30% of controls, OR (1.909), CI (0.761- 4.788). Diabetes was reported in 37.5% of cases and 32.5% of controls, OR (1.246), CI (0.496 – 3.129). 35% of cases and 13.5% in controls, suffered from history of cardiac problems, OR (3.79), CI (1.205 – 11.789). 20% of the cases and 7.5% of controls, had a history of arterial problems OR. (3.08), CI (0.754 – 12.613). Regular consumption of a diet high in fat was one of the most significant variables in the study where it was found in 70% of the cases and in 27.5% of controls, OR (6.15), CI (2.334 – 16.211). 37.5% of the cases and 27.5% in controls, were current

or former smokers. Non of the subjects in either group reported consumption of alcohol. 55% of the cases and 80% in controls, performed daily sport or physical activity, which was defined as walking for half an hour or what is equivalent, OR (0.306), CI (0.133 – 0.826). For the 30 stroke-surviving participants of the 40, blood pressure was tested and FBS, TRIG, and CHOL. tests were done. 66.7% Of the cases and 20% of controls, were found to have hypertension, OR (8.00), CI (2.475 – 25.860). Only 3.3% of the cases and 6.7% of the control group had high blood cholesterol, OR (0.483), CI (0.041 – 5.628). Current FBS was high in 26.7% cases and in 16.7% of control, OR (1.818), CI (0.518 – 6.382). And finally, current Tryglyceride level in the blood was high in 40% of the cases and in 30% of control, OR (1.556), CI (0.534 – 4.532).

63% of the cases were admitted to the hospital with high blood pressure, 25% reported that they have had the stroke while they were sleeping, 65% of the patients were angry or nervous in the proceeding days before the stroke as reported subjectively by the cases or their relatives. 25% of the patients had had recurrent strokes. And finally the peak of the time distribution of stroke reached it's maximum in November 17.5% and in February 15%. **Conclusions: Current hypertension, history of cardiac problems, regular consumption of fatty diet, and inadequate regular sports or physical activities, was confirmed as significant risk factors of stroke.** Intervention policies were suggested considering these modifiable risk factors.

1.1 Demographic data / Hebron.

Hebron is one of the oldest cities in the world. It lies in the southern part of the West Bank, 50 km south of the capital, Jerusalem. It is characterized by its high mountains that reaches to the height of 900 – 1000 above sea level. It extends over an area of 1000 square Km. Planted mainly with vegetables and fruits.

The population of Hebron is relatively a young population, with 49% aged under than 15 years, and 3% aged above 65. The total population of both the city and the surrounding rural areas, was 405 664 as reported in the national census, (PCPS, 1999), divided as 119 589 people living in the city (29 %), and 287 075 people (71%) living in the rural areas. The fertility rate was reported as 6.83, with infant mortality rate of 34/1000 (PCPS, 1996). Hebron is one of the most Moslem conservative societies in Palestine, in which traditions still govern them more than any other Palestinian community, the local economy depends mainly on small scale business, trade, industry, agriculture, governmental employment and employment in Israel

1.2 Health Services:

Health services in Hebron are developing rapidly, and it is divided into four major categories.

1. Governmental services. It is providing services through six primary health care centers, and a 142 bedded general hospital, these provide services for the majority of the population and particularly, governmental employees. And participants in the governmental health insurance system.

2. Non-governmental organizations, this sector participate in a large proportion of the local health care needs. It provides services through emergency centers, primary health care clinics, in addition for two hospitals, one pediatric hospital (Mohamed Ali Al Mohtaseb pediatrics hospital), and another general hospital with capacity of 104 beds (Al Ahli hospital), which it serves mainly those who are not insured with the government insurance system. Also Al Ihsan institution which provides services of elderly care, shelter, and rehabilitation for the young and elderly disabled people.
3. U.N.R.W.A: It provides services for Palestinians who have UNRWA registration cards within the district. It provides free preventive and treatment services, through 7 clinics and referral system for the NGO's hospitals.
4. The Private sector. It provides services through private clinics, laboratories, physical therapy centers, diagnostic x-ray centers, and four obstetrics and gynecology hospitals. In addition for intensive work to complete Al Meezan hospital which is expected to include distinguished specialties like Nuero and cardiac surgeries. This sector is contributing significantly in the health services provided in Hebron.

2 - Back Ground of the Problem.

2.1 Definitions of stroke:

- Stroke is defined as the interruption of the blood supply to the brain by a blocked artery or ruptured vessel. (stroke prevention council , 1999)
- Rapidly developing clinical signs of local and at times global loss of cerebral function, with symptoms lasting for more than 24 hours or leading to death, and with no apparent cause other than that of a vascular origin. (WHO , 1980)

2.2 Types of stroke:

1. Ischemic stroke :

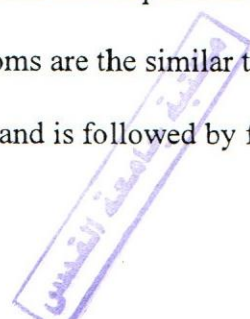
Occurs when blood clot blocks an artery, and cuts off the brain blood supply. It is the most common type of stroke.

2. Hemorrhagic stroke :

It is caused from the bleeding of a blood vessel in the brain, this type is less common than the ischemic stroke.

3. Transient Ischemic attack :

It is also referred to as a mini stroke. It is a small reversible interruption in the brain blood supply due to a blockage of a blood vessel, symptoms are the similar to a stroke but they usually last only a few minutes or hours and is followed by full recovery.



2.3 Symptoms of stroke:

1. A sudden weakness or numbness of usually one side of the body, face, arm ,or leg.
2. Numbness or loss of sensation.
3. Decreased vision in one or both eyes.
4. Difficulty of speaking or understanding.
5. Dizziness and loss of balance or coordination.
6. Sudden severe headache.

(Stroke prevention council, 1999).

2.4 The main risk factors for stroke:

1. Hypertension.
2. Previous stroke or TIA (Transient Ischemic Attack) or family history of stroke.
3. Heart disease especially Atrial fibrillation.
4. Carotid artery diseases.
5. Smoking.
6. Diabetes.
7. Alcohol abuse.
8. High blood cholesterol.
9. Physical inactivity.
10. The use of oral contraceptives.

(Nebraska stroke foundation, 1999).

Statement of the problem:

Hebron is a relatively big city where it is noticed that there is an increasing number of deaths attributable to stroke (cerebral vascular accidents) as reported by the Ministry of Health in Hebron. The deaths attributed to stroke reached to 5% during 1995, 10% during 1996 and the year 1997, and 11% in 1998 (Ministry of Health, Hebron, 1999). At the same time, the admission rate due to new strokes is also increasing. Using the computer files in the years of 1997/98, 69 patients were admitted to the hospital, due to a new stroke, in 1997. Whilst in 1998, 120 patients were recorded in the computer files. This could be attributed to many reasons, including the implementation of the computer registry in 1997 and to the increase in the hospital's capacity. Meanwhile there is little recorded data about the incidence, and the main risk factors of the problem for the region. There were no previous programs for reduction of stroke, despite the fact that reducing the cerebrovascular diseases and stroke was part of the national health plan. This could be due to inadequate data regarding the magnitude of the problem, or to that the ministry of health is still in the phase of construction after inheriting shortages from the occupation period. There is a great need to estimate the scope of the problem and to increase the public awareness of it, along with the main risk factors of stroke in the region.

Significance of the problem:

Stroke is considered the third cause of death, and first disabling factor of adults in developed countries. Even though that high percentage of strokes could be prevented (National Stroke Foundation, and 1999). So concerning our country, many

people are not aware of the size of the Problem. So this study aims to reflect the size of the problem, and to highlight the main risk factors of stroke in our region, thus to prioritize for a future stroke incidence reduction plan, for our community, through different health education programs.

5 - Aim of the study:

- To establish a baseline information about stroke risk factors in Hebron.

6- Objectives of the study:

1. To identify the main risk factors of stroke in Hebron city.
2. To identify the priorities of a future stroke intervention policy.

7-Research question:

What are the main risk factors contributing to stroke in Hebron?

8- Possible limitations for the study:

- 1- Hospital's refusal of the access to data from hospitals files.
- 2- Doctor's written medical records unclarity.
- 3- Difficulty of finding the patients addresses.
- 4- Refusal of patients to participate in the study.
- 5- Lack of financial resources.

18 - Weaknesses of the study:

The study had some weakness. Some of them were due to external circumstances or to the limited resources that were available. Those major weaknesses were:

1. The number of cases was small in the study, however it was not possible to enlarge the sample due to the financial limitation, as previously mentioned.
2. The majority of patients were discharged without formal diagnosis of the type of the stroke, since there was no CT scan at the hospital at that period, and it was not possible to organize a CT scan test for the patients participating in this study. Even though it is considered very important to study the association of the risk factors with different types of stroke.
3. A case control study is the correct design for such a research, however better results could perhaps be achieved if the data was taken from the cases and their relatives at the time of admission rather than searching for patient's data after discharge.
4. Some of the variables could have been more reliable if they have been tested practically instead of a questionnaire. For example, cardiac problems, when testing it by using ECG and other tests by a specialized doctor.

19 - Conclusion:

It is very important to think about a possible intervention plan, through different health education programs regarding the general risk factors of stroke, these programs should target the five significant risk factors that was highlighted in this study. – Consumption of a fatty diet, the level of sports and physical activities, cardiac problems, hypertension, and the alarming sign of numbness or weakness in the upper limb or

lower limb or both, in one side of the body -. It should be emphasized that the majority of these risk factors is modifiable, and could be controlled or monitored.

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20 – Recommendations:

- To start working on a national public awareness plan to educate public about the association between the existence of these risks and the occurrence of the stroke. To explain the predisposing factors of these risks and the way of controlling them. And stressing the importance of an early risk-free life style. All types of media could be used including news papers and magazines articles, medical discussions on local T.V channels, posters and leaflets in primary health care centers, clinics, and other public places.
- Calling for a national stroke awareness day, where all the above mentioned activities are activated.
- Advertising for the existing primary health care centers who are the first defense line of this plan. And explain their important preventive role in early screening and treatment of the risks in general, and consultation, specially talking about hypertension cardiac problems, consumption of fatty diet, the importance of daily regular physical activities or sports, and the possible early signs before stroke.
- It is important to emphasize the necessity to reach to a standard protocol of assessment of stroke patients on admission. This would include socioeconomic data, relevant lab tests, subjective assessment and a CT scan, to enable accurate diagnosis of stroke. This could assist in decision regarding an appropriate follow up strategy, which aims to prevent reoccurrence of stroke in the future.
- It is important to take in consideration that this study is the first of its kind in the region, and state that there is a need for other similar studies in the area and in

different areas within the country. Different study designs are also needed to confirm these study results or show other differences, and to avoid the weaknesses of this study. It is suggested to take the next research data from patients in the emergency room, and during admission, which gives more reliable results and also reduce the time used to search for the patients data .