Modifiable Risk Factors For Ischemic Stroke

Akram Mohammed Ibrahim Al-Mehdawi
Marjan Hospital

Introduction

Stroke continues to have a great impact on public health. A major goal set by WHO for the year 2000 is to reduce stroke death to no more than 20 per 1,000,000 instead of 34.3 per 1,000,000 in 1987[1,4]. Stroke is frequent , recurring , and is more often disabling than fatal. The annual incidence of new strokes in the United States is nearly one half million , with over 3 millions strokes survivor alive today[2]. Stroke is the third leading cause of death in the developed countries, and treatment anprevention, stroke remains a leading public health concern with a tremendous economic impact[3]. Within 2 weeks of stroke no less than 20% and as many as 60% of stroke patients require some assistance with activities of daily living. Hemiplegia or hemiparesis, which exists in 70% to 85% of stroke patients at 2 weeks, is present in 50% at 6 months most of patients tend not return to their previous work and social endeavors[4].Major parts of the prevention can be achieved if the risk of the stroke is reduced. To achieve this reduction on stroke mortality, efforts must be aimed at preventing stroke through a combination of primary and secondary preventing measures identifying risk factors and intervening to control or modifying them, remain the most important means of reducing strokeincidence[5].Gore, Lick projected that 378500 strokes (in USA) could be prevented by successful treatment of Hypertension, cigarette smoking, Atrial fibrillation[3] and heavy alcohol consumption. Modifiable and non modifiable risk factors for ischemic stroke have been identified and include age, gender, race, hereditary (nonmodifiable), Hypertension, Cardiac diseases particularl a-tion, diabetes mellitus, Hypercholestrolemia, cigarette smoking, and alcohol abuse[7].

Methods

Sixty patients (30 males, 30 females), age range between 20-80 years, were admitted to AL-Yarmouk teaching hospital in

Baghdad during the period 94-97. Patients with cerebral bleeding (haemorrlogical stroke), h-noid haemorrhage, trauma were excluded from the study.

The workup consists of history of physical examination to establish the risk factors and the neurological and medical status of the patient a non-contrast brain CT was done for them to confirm diagnosis of ischemic stroke.The initial evaluation includes complete blood picture with platelets count, chemistry profilewith cholesterol and glucose, FSR , VDRI, chest ray, ECG, ECHO cardiography[8] .The study aim to find possible factors.

Results

Data show the distribution of stroke in relation to age .

age group	percentage
20-35	5.3%
36-50	14.7%
51-65	52%
66-80	28%

Data from the study show that 41(68.3%) of patients have Hypertension while only 19(31.7%) were normotensive

Cardiac diseases

Cardiovascular diseases are common in patients with stroke, the following table shows the risk of different cardiac diseases

diseases	No. of patients	Percentage
Ischemic heart	14	23.3
Heart failure	5	8.2
* Valvular Heart diseases	9	16
** Atrial fibrillation	11	17.4

[The abnormalities of ECHO study of nine patients with valvular heart diseases as follow (4-mitral stenosis. 3-mitral valve prolapse, 2-Aortic stenosis and regurgitation)]

Diabetes mellitus

Thestudy show only 12(20%) patients had diabetes mellitus (depending on history of diabetes mellitus and two reading of fasting blood sugar) .

Smoking

The study show that 35(58.3%) patients were smokers and 25(41.7%) were non-smokers.

Alcohol

Only 5(8.3%) patients had history of heavy alcoholic intake.

Hypercholestrolemia

The following table shows the distribution of patients regarding the level of cholesterol

	150-200 mg/dL	200-250 mg/dL	>250 mg/dL
No. of patients	37(64.7%)	14(20.3%)	9(15%)

Discussion

The steep decline in stroke since the 1960s suggests that identification and control of modifiable risk factors influence stroke incidence and mortality rates[6] in spite of small No. of patients, we want to focus to the risk of ischemic stroke in our population and compare with other standard study.

(1) Hypertension

Patients affected by Hypertension in our study (68%) while in Framingham heart study (80%) data from European group was (74.3%) data from the Framingham heart study show that patients with definite Hypertension has a three fold greater risk of stroke than normotensive individual[9] the relative low result may result from the small No. of patients or could be the incidence of Hypertension is less in our population, beside that the Framingham study has long period of follow-up.

(2) Cardiac disease

Is common in patient with stroke, in our study only 10% of patients were free of any cardiac disease, while 13.6% in Framingham study. Most of the patients have more than cardiac disease. The outcome is usually poor when the patients has more than a disease. Atrial fibrillation is strong prediction of stroke, occures in about 1% of population in our study. 17.4% of patients have AF while 18% in Framingham study and 12% in European associated group and this figure may focus to

the use of anticoagulant therapy in prevention of stroke[10,11].

(3) diabetes mellitus

The risk of stroke in patients with diabetes mellitus is about four times that found in normal individuals and atherosclorosis accounts for 80% of mortality in diabetic patient[12], in this study only 12 patients (20%) have diabetes mellitus. In the Honolulu heart program, diabetic subjects experienced 62.3 stroke per 1,000 compared with 32.7 stroke per 1000 in non diabetic subjects during 12 years follow-up[13].

(4) Smoking

Data show 35 patients (58.3%) were smokers the European group study linked smoking with stroke occurance, the estimated relative risk is 1.5-2.9 times that of non smokers[13].Smoking cessation could potentially prevent more than 601000 stroke annually[14].

(5) Alcohol

The possible relationship between alcoholic consumption and stroke has been recognized. Excessive consumption increases the risk of stroke to 4 times[15].

(6) Hypercholesterolemia

The follow-up data from 13 randomized trial did not clear the relationship between elevated total cholesterol and stroke incidence. Only 9 patients (15%) had more than 250 mg/dL. More of these patients have another risk lik i-tus, coronary heart disease. The role of Hypercholesterolemia requires examining the effect of various Lipids on the risk of the rosclesutic stroke . So the assessment of HDL, LDL, VLDL may be of value in study the relation[16] of Lipid and stroke.

References

1- Davis pH, Dambrosia Jm; Schoenberg Bs, *et al* -Risk factors for ischemic stroke; prospective study in Rochester, Minnesota Ann Neusology 1987;22:319-327.

2- Scheinbery P. controvesies in the management of cerebral stroke. Neusology. 1983;38,1609-16.

3- Petersen p, BoysenG- primary report of the stroke prevention in Atrial fibrillation New-England medical J. 1990;322:869-8.

4- Healthy people 2000-Department of health and human services-public health service 1991.

5- Klag ML, whelton P.K.Deeline in use stroke mortality-stroke 1989;2:14-21.

6- Gore like pB-stroke prevention-stroke 1994;25;220-224.

7- Dyken ML, wolf P.A. Risk c-tors in stroke-stroke 1984; 15: 1105-1111.

8- Kiely D.K., wolf P.A.-The Framingham study-stroke-ann Intern. Med. 1993:119-136-145.

9- Garraway WM., the changing pattern of Hypertensive and decline incidence of stroke-JAMA 1987; 258:214-217.

10- Wolf P.A., Abbott RD Atrial fibrillation: a major contributor to stroke Arch Intern. Med. 1987;147:1561-1564.

11- Cerebral Embalism Task Force. Arch Neusol-1989;64:727-743.

12- Abbott RD, Donahue RP-Diabetes and stroke-JAMA 1987; 257:949-952.

13- Kannel W.B. Diabetes and cardiovascular disease Lancet 1988:119-126.

14- Wolf P.A., D.Agostine R.B. cigarette smoking as a risk factor for stroke JAMA. 1988;259:1025-29.

15- Camargo C.A. Jr.moderate alcohol consumption and stroke-stroke 1989 ; 20:1611-26.

16- ISO H, Jacob's DR Serum cholesterol levels and Six-years mortality from stroke N Engl. I Med. 1989;320:904-910.