Study of Relationship Between High Blood Pressure and Clinical Markers and Individual Cerebro Vascular Accident in Clients that Referred to Towhid Hospital in Sanandaj(Kurdistan of Iran) in 2010

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hypertension is the most significant known risk factor for stroke. Normal blood pressure is around 120/80, while High blood pressure is when your blood pressure is consistently over 140/90. This is called 'hypertension'. A person with untreated hypertension is four times more likely to have a stroke than someone whose blood pressure falls within the healthy range. This study was cross- sectional descriptive. The statistical population included all of the patients (100 patients) with CVA referred to towhid hospital.The information was completed through questionnaire and interview, and then scored and statistically analyzed. Results showed that the samples (53%) females aged 51-70 years with majority of 47% and 48% housewives, the majority of illiterate, and 55% with previous history of stroke did not attack. Total days of hospitalization varied between 5 and 9 days with 45% of rural residence, and admission with 42% suffering from Right hemiplegia that 79% had no obvious impairment of speech and They mostly had high blood pressure for 4-7 years(88%). Also between high blood pressure and Clinical markers and individual stroke with P< 0/005 a significant relationship was shown. A stroke is a medical emergency and can cause permanent neurological damage, complications, and death. High blood pressure is the most important modifiable risk factor of stroke Artillery. hypertension is the most important hygienic problem in developed countries, which if not cured will lead to fatal complications..[Ghader salehnejad, Nasrin Aliramaei, Kian zobeiry, Azam naderi**, Study of Relationship Between High Blood Pressure and Clinical Markers and Individual Cerebro Vascular Accident in Clients that Referred to Towhid Hospital in Sanandaj(Kurdistan of Iran) in 2010**. *Life Sci J* 2013;10(1S):441- 450](ISSN:1097-8135). http://www.lifesciencesite.com. 72

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Introduction

Stroke is a major cause of death and disability in the world. A stroke, sometimes called a "brain attack "occurs when blood flow to an area in the brain is cut off. As a result, the brain cells, deprived of the oxygen and glucose needed to survive, die. If not caught early, permanent brain damage can result[1]. Elevated systolic and/or diastolic blood pressure (BP) is commonly observed in patients after acute ischemic stroke, even in previously normotensive patient[2]. High blood pressure (BP >140/90 mm Hg, as defined by the World Health Organization) occurs in acute stroke in up to 75% of cases[3-4], and is present in 80% of patients with acute ischemic stroke[5]. High blood pressure (BP) is present in more than three quarters of patients at presentation with acute ischemic stroke and is independently associated with a poor outcome and early recurrence[6]. Data from the International Stroke Trial (IST) confirmed that the risk of early death and late death or dependency was independently associated with increasing systolic BP (SBP) in 17 398 patients[5] A systematic review of high BP in acute stroke and subsequent outcome showed that death, dependency, and the risk of stroke recurrence were more likely in ischemic stroke patients with higher BP values. Multiple studies have shown that high BP is associated independently with poor outcome[6], including both early death and late death/dependency. Mechanisms for this relationship in ischemic stroke include an increased risk of early recurrence[7] and severe cerebral edema[5]. Acute hypertensive response is the elevation of blood pressure (BP) above normal and premorbid values that initially occurs within the first 24 hours of symptom onset in patients with stroke. This phenomenon was reported in >60% of patients presenting with stroke in a nationally representative study from the United States[8]. Likewise, high premorbid BP contributes to elevated BP in acute stroke and could contribute, in part, to poor outcome through previous cerebral vascular damage. Third, the strategy of dichotomizing BP, though clinically relevant, might create artificial strata for the analysis. For example, several articles have reported a U-shaped relation between BP and outcome, with the least poor outcome at an SBP of 140 to 160 mm Hg in the IST (judged by the nadir of the U)[5, 9]. In at

least a portion of these patients, the acute hypertensive response is merely a reflection of inadequately treated or undetected chronic hypertension[10]. Studies of experimental stroke have shown a relationship between hypertension and hemorrhagic transformation[11], One third of subjects presenting with ICH continue to demonstrate hematoma expansion (with subsequent deterioration and death) in the first few hours after onset[12] The elevated BP often returns to normal spontaneously within a few days after stroke or after recanalization of the occluded artery with thrombolysis[13]. The relationship appears to be mediated above all by increased rates of early recurrence and early death resulting from presumed cerebral edema in patients with high BP and noncerebral mechanisms such as increased coronary heart disease events in those with low BP[5]. From January 2000 to December 2003, 160 patients with acute ischemic stroke were treated with intra-arterial thrombolytic (IAT) at our institution. Many aspects of some of these patients and the technique used for IAT have been published previously[14-15]. No studies investigating the relation between BP and hemorrhagic transformation or cerebral edema in ischemic stroke fulfilled our inclusion criteria. Nevertheless, evidence that was excluded from the review suggests that an acutely elevated SBP is associated with increased fatal cerebral edema[5, 16]. Also, several studies have observed that high BP promotes hemorrhagic. Although this was not found in the IST[5]. A systematic review of high BP in acute stroke and subsequent outcome showed that death, dependency, and the risk of stroke recurrence were more likely in ischemic stroke patients with higher BP values[6]
People who have high blood pressure are 4 to 6 times more likely to have a stroke. Over time, hypertension leads to atherosclerosis and hardening of the large arteries. This, in turn, leads to blockage and weakening of the walls of small blood vessels in the brain, causing them to balloon and burst. The risk of stroke is directly related to how high the blood pressure is. The most common causes of hemorrhagic stroke are high blood pressure and brain aneurysms. An aneurysm is a weakness or thinness in the blood vessel wall that causes it to balloon outward. Blood pressure in healthy individuals exhibits a diurnal variation, with a nighttime dip of 10%-20%. A persistently high nighttime BP is associated with increased cardiovascular morbidity. The effects of diurnal BP variations on the neurologic deficit in acute stroke at presentation and in the first few weeks post stroke are unclear. This study assesses the relationship between high blood pressure and Clinical markers and individual cerebrovascular accident.

General goale: We carried out this study to determine of relationship between high blood pressure and Clinical markers and individual cerebro vascular accident in clients that referred to towhid hospital in sanandaj and to find out relationships between cerebro vascular accident and high blood pressure.

Material and methods

This is an analytic, descriptive research. The research society includes number of samples was 100 patients with CVA, selected from of towhid hospital sanandaj city, and they unannounced their tend and sampling was done with an easy way and based on the purpose.

Research instrument

The questioner is designed by researcher based on research purposes and interview by the research or units itself . the questionnaire includes 12 questions relating personal information. All these questionnaires are completed by research units and for statistical analysis, applied spss, using comprehensive– descriptive statistical methods and using chi – square at the significant level of p<0/05

Results

Results showed that the samples (53%) females aged 70-51 years with majority of 47% and

Table 1 –Frequency distribution mostly Demogra characteristics

Demographic characteristics	mostly	Number(%)
sex	female	53(%)
Age in years	51- 70	47(%)
Job	House wife	48(%)
Stroke previous record	no	55(%)
High blood pressure	yes	78(%)
Number of days inpatient	5-9 day	45(%)
Need to be helped in usual tasks	yes	53(%)
Impaired speech	No	79(%)
Education statues	Illiterate	38(%)
Place of living	village	43(%)
Impaired organ	Right hemiplegic	42(%)
Relative taking care of the patient	Spouse	63(%)

48% housewives, the majority of illiterate, and 55% with previous history of stroke did not attack. Total days of hospitalization varied between 5 and 9 days with 45% of rural residence, and admission with 42% suffering from Right hemiplegia that 79% had no obvious impairment of speech and They mostly had high blood pressure for 4-7 years(88%). Also between high blood pressure and Clinical markers and individual stroke with P< 0/005 a significant relationship was shown.

Demographic characteristics of patient with stroke

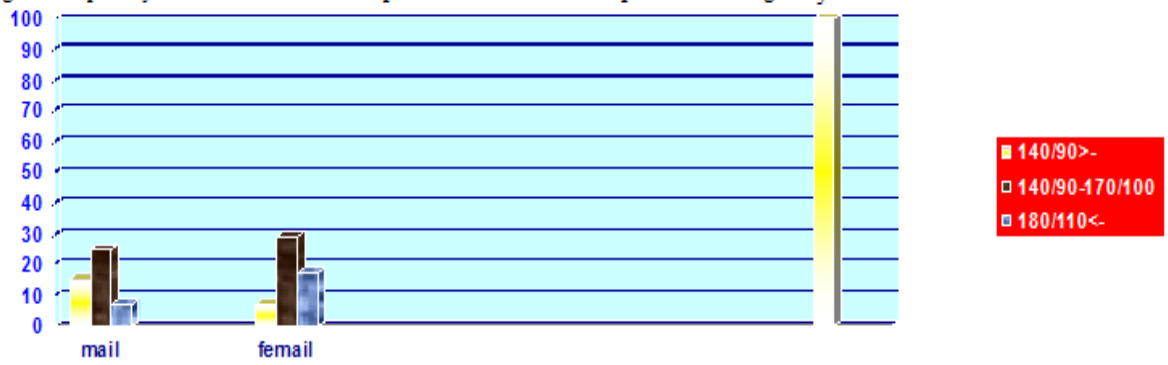
Table 2- Frequency distribution rate of blood pressure at the time of admission

Frequency	number	percent
140/90>-	22	22
140/90-170/100	54	54
180/110<-	24	24
Total	100	100

Discussion and conclusion

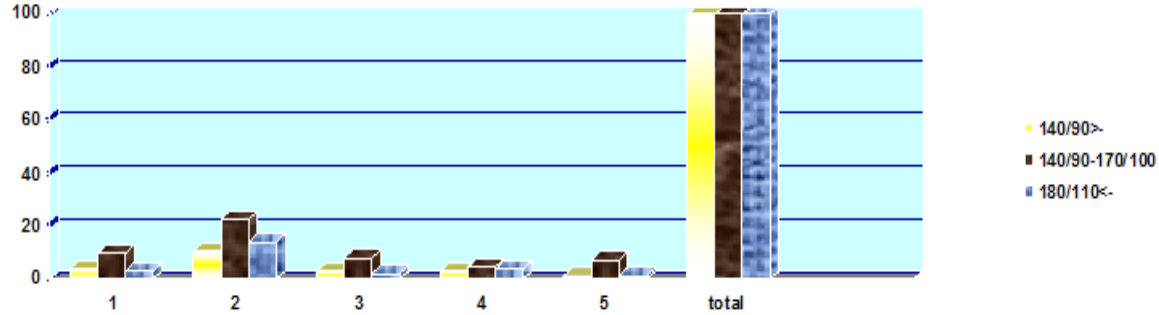
systemic BP. The mechanism by which GTN can lower BP while maintaining CBF was not addressed in this study. However, GTN forms NO, which is a potent modulator of cerebrovascular reactivity, especially in collateral vessels, such as pial arteries[17]. Stroke remains a major healthcare problem. Its human and economic toll is staggering Survivors of a transient ischemic attack (TIA) or stroke represent a population at increased risk of subsequent stroke. Approximately one quarter of the 795 000 strokes that occur each year are recurrent events. The true prevalence of TIA is difficult to gauge because a large proportion of patients who experience a TIA fail to report it to a healthcare provider[18]. While hypertension constitutes the most important modifiable cerebrovascular risk factor , confirmed by a host of epidemiological data and by more recent intervention trials of primary and secondary prevention of stroke in hypertensive patients .Hypertension is one of the factors contributing to the development of cerebrovascular insult < apart from heart diseases and diabetes . Preventing stroke is the most important strategy for

Fig 1- Frequency distribution relationship between rate of blood pressure and age in years



$X^2 = 7/33$ DF=8

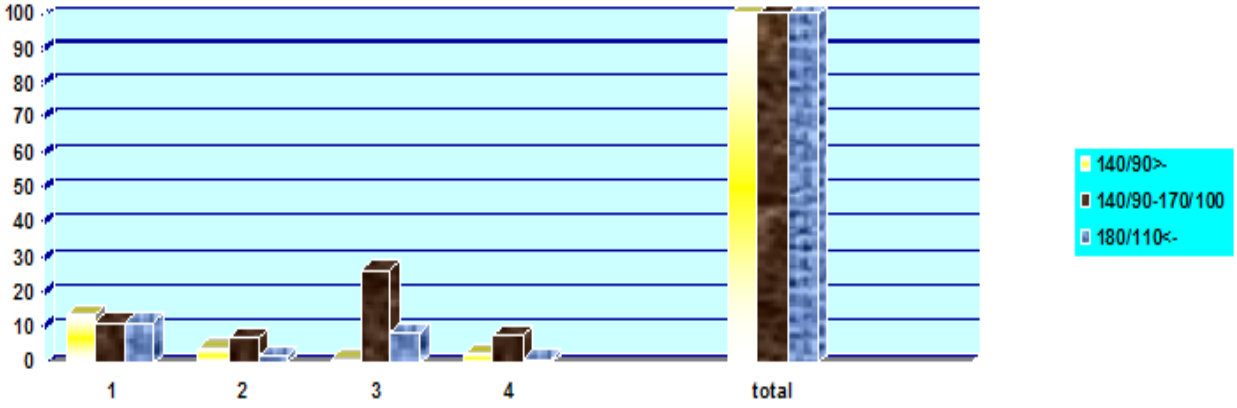
Fig 2- Frequency distribution relationship between rate of blood pressure and job



1= Unemployed 2= Housekeeper 3= farmer and Labor 4=Self-employed 5=Self-employed

$X^2 = 4/26$ DF=8

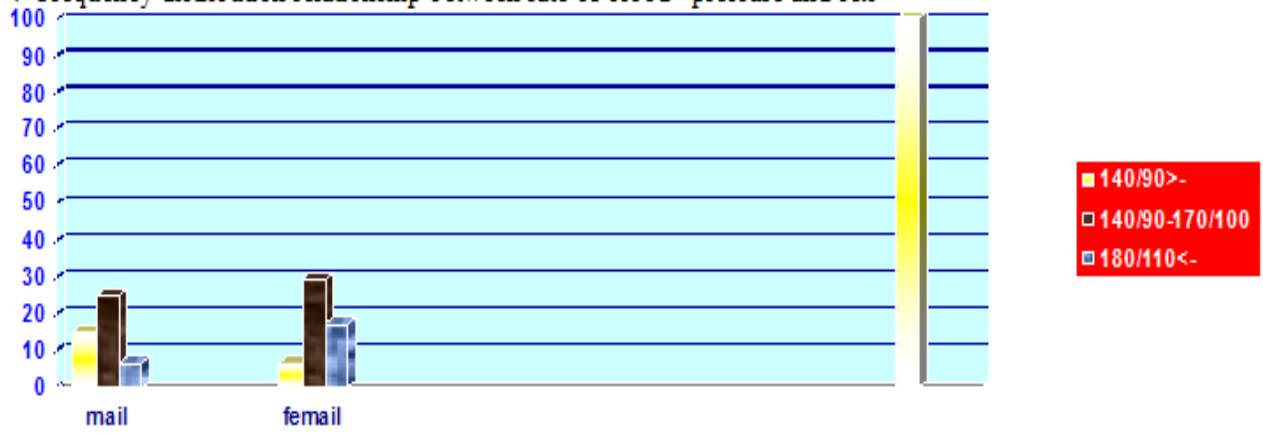
Fig 3- Frequency distribution relationship between rate of blood pressure and Education statues



1= Illiterate 2= In reading 3= Sixth grade 4= Diploma

$X^2 = 19/47$ DF=6

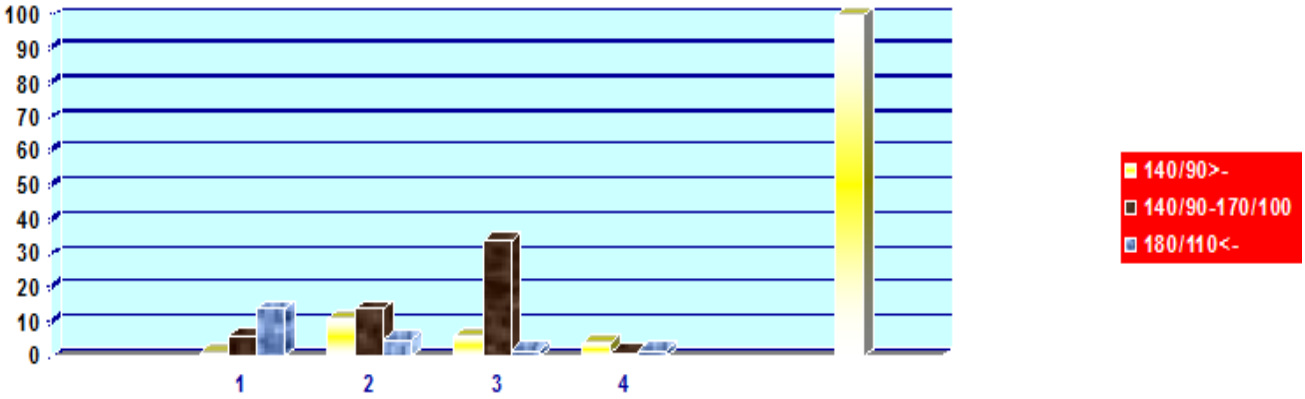
Fig 4- Frequency distribution relationship between rate of blood pressure and sex



$X^2 = 7/04$ DF=2

reducing the cost of this disease. Management of modifiable risk factors, especially hypertension. The two main strategies of stroke prevention are the "population "approach and the "high risk "approach. The "population " approach aims to reduce stroke by lowering the prevalence and mean level of causal risk factors in the community , by means of public education and government legislation . The " high risk " approach aims to reduce stroke by identifying individuals at high risk of stroke , and lowering their risk by means of optimal medical therapies. The results showed initially admitted with 78 % had a blood pressure greater than 140/90 mm Hg and with 22 % had a blood pressure Less than 140/90 mm Hg. The acute hypertensive response in stroke is characterized by its high prevalence, self-limiting nature, and prognostic significance. Some have reported that blood pressure spontaneously decreased in the first hours after stroke onset in patients with mild to moderate stroke[19] . Data from the International Stroke Trial (IST) confirmed that the risk of early death and late death or dependency was independently associated with increasing systolic BP (SBP) in 17398 patients[5] All of the subjects had an elevated systolic BP (140 to 220 mm Hg) at enrollment. Subjects were excluded if they had a requirement for, or a contraindication to, nitrate therapy; had a definite need for previous antihypertensive therapy or vasoactive drugs; or could not cooperate with scanning[20]. Systolic BP criteria ranged from 150 to 200 mm Hg and diastolic BP criteria from 90 to 115 mm Hg(8)bath define

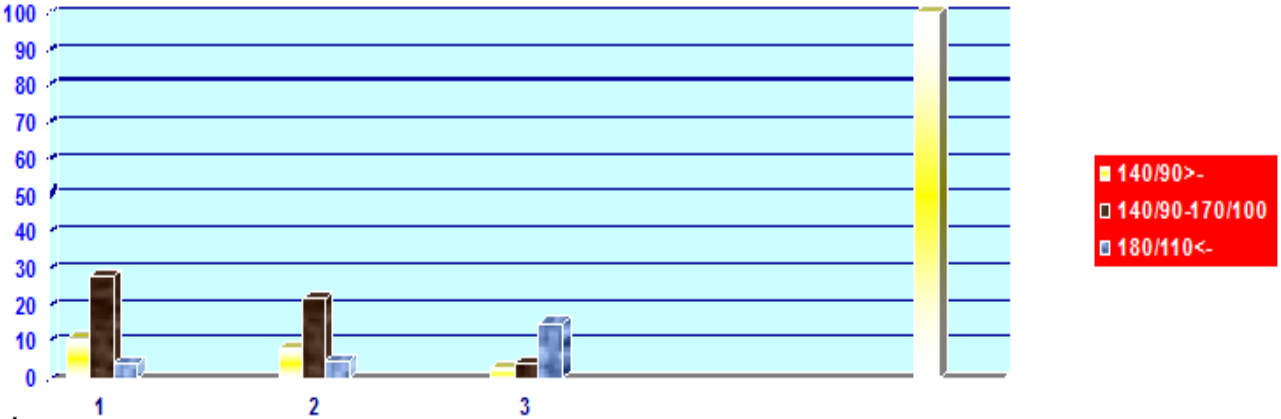
Fig 5-Frequency distribution relationship between rate of blood pressure and impaired organ



1= Quadriplegia 2=Paralysis of the left 3= Paralysis of the right 4=NO paralysis

$X^2 = 42/24$ DF=6

Fig 6-Frequency distribution relationship between rate of blood pressure and Place of living



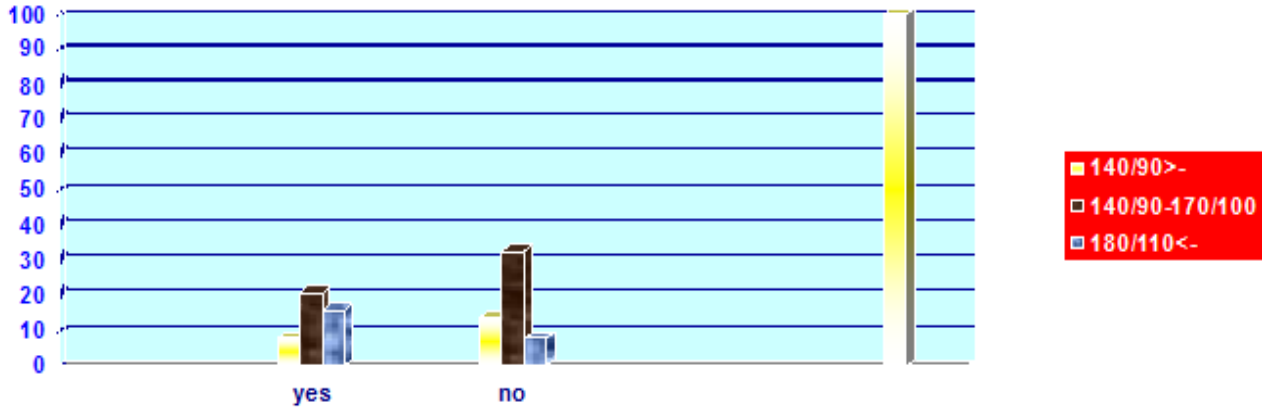
1=Village 2=countryside 3= Downtown

$X^2 = 27/65$ DF=4

hypertension on the basis of the presence of consistent BP ≥ 140/90 mm Hg[2] High blood pressure (BP) is common during acute ischemic stroke and is associated with subsequent death, dependency, or clinical deterioration[6].The acute hypertensive response may be expected in ≈ 10 million patients per year. The acute hypertensive response in stroke patients is managed by a diverse group of physicians, including emergency physicians, intensivists, internists, primary care physicians, neurologists, neurosurgeons, and cardiologists. Previous audits suggest that antihypertensive agents and management strategies vary considerably and are not always consistent with recommended guidelines[21] between high blood pressure and Clinical markers and Personal with P< 0/005 a significant relationship was shown. More recent studies also used admission BP to determine the relationship between acute BP and stroke outcomes[22-23]. The results shown in this study most samples were studied (53%) females and 47% with the majority between 51-70 years of age and 48% of housewives, the majority 38% illiterate, and 55% of the previous history of stroke did not attack. Pleis writes Stroke is more prevalent in men than in women[24]. The risk of ischemic stroke and ICH doubles for each successive decade after age 55 [25] Also variable was the number of days hospitalized, with 45% between 5-9 days, and most of them lived in the village (43%), and with 42% Initially admitted right side paralysis that Speech disturbance was not clear with 79%.

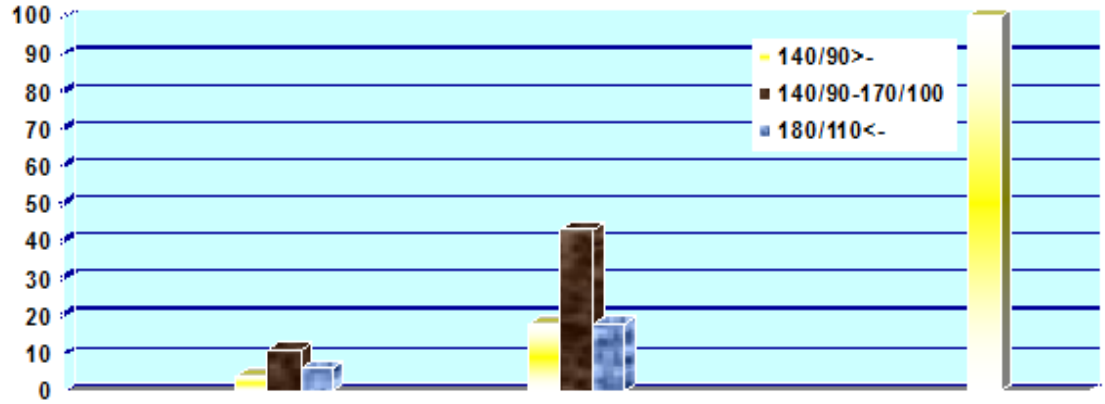
Results also showed that ,the majority 63%, is the closest care of her sick husband, and However, 53%

Fig 7-Frequency distribution relationship between rate of blood pressure and History of previous stroke



$X^2 = 6/03$ DF=2

Fig 8-Frequency distribution relationship between rate of blood pressure and impaired speech



$X^2 = 0/35$ DF=2

of them have announced that others need help in everyday tasks. Stroke is a life-changing event that affects not only stroke patients themselves but their family members and caregivers as well. Utility analyses show that a major stroke is viewed by more than half of those at risk as being worse than death[26] Results was significant between high blood pressure and age. 23% of those aged 71-90 years were their blood pressure was between 140/90 - 170/100 mmHg. Also, 47 percent of the age between 70-51 years, 89% higher blood pressure of 90/140 respectively.

In patients with stroke was a significant association between high blood pressure and sex, as were 29% of women with high blood pressure 140/90 mmHg 170/100 and only7% had blood pressure less than 140 / 90 mm Hg .In patients with Location was a significant relationship between hypertension and stroke , As with the majority 28% of people who lived in the village, was blood pressure between 170/100-140/90 mm Hg and can because it did not have access to the specialist and lack of awareness of the prevention of high blood pressure. There was a relationship between hypertension and jobs people with stroke, As the majority of women were housewives (23%) had high blood pressure 170 / 100 - 140/90 mm Hg and Those employees were high blood pressure 110/180, with at least 1% and 1%, blood pressure was less than 90/140 mm Hg. Between hypertension and education status was a significant relationship, so Illiterate people than those who had higher levels of education and diplomas, were suffering from high blood pressure. Although direct injury is the most likely explanation, an indirect effect of muscle paralysis [27]. The results showed that was a significant relationship with been high blood pressure and hemi plegia in patients with stroke, So those who had suffered paralysis on the right with 42% of those who had blood pressure between 140 /90 to 170 / 100 mm Hg and 4% of

those who had blood pressure less than 140 / 90 mm Hg, without paralysis.14 % Who had high blood pressure was 180/110 mm Hg, who were suffering from quadriplegia. Stroke is also a leading cause of functional impairments, with 20% of survivors requiring institutional care after 3 months and 15% to 30% being permanently disabled[28] And may lead to abnormal autonomic activity and raised levels of circulating catecholamine's[29] ASA[30] recommends that antihypertensive therapy be considered for all patients with ischemic stroke or transient ischemic attack, because benefit is seen in persons with and without a history of hypertension[31]

The results showed those who had no history of previous attacks, with 33% of the blood pressure was between140/90- 170/100 mm Hg and Among those who had a history of previous attacks, 8% had blood pressure of less than 140/90 mm Hg and 16% had blood pressure of 180/110 mm Hg. New-onset high BP in patients without a previous history of hypertension has been observed in 20% of patients with stroke[32] and 8% of the general population[33]. There was no statistically significant relationship between hypertension and impaired speech. A transient elevation of arterial BP is observed in up to 80% of patients with acute ischemic stroke[5-6, 34]. In such instances, the data were dichotomized into a high-BP and a combined normal/low-BP group by using a cut point nearest to 150 mm Hg because outcome might be best at this level Data from the International Stroke Trial (IST) confirmed that the risk of early death and late death or dependency was independently associated with increasing systolic BP (SBP) in 17 398 patients[5].

The current ASA[35] and European Stroke Initiative[36]. Guidelines recommend lowering BP in patients with an ICH to maintain systolic BP below 180 mm Hg. Both guidelines acknowledge that there may be a subset of patients who can tolerate more aggressive BP reduction, such as those with good neurological status or those without chronic hypertension. A recent observational study suggested that more aggressive BP reduction may have greater benefit in reducing the rate of hematoma expansion. One study assessed the results of lowering systolic BP below targets of 140, 150, or 160 mm Hg. 52% of patients with stroke were reported to have an acute hypertensive response at the time of admission. The criteria used to define high BP varied considerably: Systolic BP criteria ranged from 150 to 200 mm Hg and diastolic BP criteria from 90 to 115 mm Hg. In one of the largest studies in the United States using the National Hospital Ambulatory Medical Care Survey [37]. Three articles found improved outcomes for high SBP[34, 38]and DBP [39] however, when analyzed with other studies, there was no evidence of a protective effect for high BP. Up to 80% of patients show elevated BP values within the first 24 to 48 hours after stroke onset, which subside over the next few days or weeks[2]. Mattle study demonstrates a relationship between SBP elevation in the first hours after stroke and patency of the initially occluded vessel. In acute stroke patients, elevated SBP at admission shows a downward course in the following hours, which is accelerated by recanalization, and recanalization increases the chances of a favorable outcome [13]. This review has found evidence for mechanisms that might link high BP to poor outcome. In ischemic stroke, high DBP was associated with a 2-fold increase in risk of early recurrence. SBP was an important determinant of recurrent stroke in IST, wherein an initial SBP of 200 mm Hg or more conferred a >50% higher risk of recurrence than did an SBP of 130 mm Hg[5].

Hypertension remains the most important well-documented, modifiable risk factor for stroke, and treatment of hypertension is among the most effective strategies for preventing both ischemic and hemorrhagic stroke.There is a general lack of definitive data to help guide the immediate management of elevated BP in the setting of acute ischemic stroke; a cautious approach has been recommended, and the optimal time to initiate therapy remains uncertain[40]. A recent study suggested that The rate of hematoma expansion was 9% in patients with systolic BP <150 mm Hg and 30% among patients treated to maintain systolic BP <160 mm Hg or a higher threshold [41] Massive edema and hemorrhagic transformation are characteristic findings of cardioembolic stroke, and they were reported to have a relationship with higher 24-hour BP in cardioembolic stroke[42] Different strategies are required to manage the acute hypertensive response in different subtypes of stroke. Therefore, early diagnosis and differentiation are critically important for timely institution of the appropriate strategy. The management of high BP in acute ischemic stroke is highly controversial because of a lack of reliable evidence from randomized, controlled trials. Aggressive BP reduction is currently not recommended in patients with ischemic stroke in the acute phase because of potentially deleterious effects observed in some observational studies and absence of a documented benefit of acute BP lowering. A reduction in BP before administration of thrombolytics in patients with ischemic stroke is important to reduce the risk of secondary ICHs. Reduction of BP in patients with ICH requires further evaluation for efficacy given recent studies that have documented clinical tolerability due to reduced

metabolism (hibernation) with preserved autoregulation in the perihematoma region[41].

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