MANAGEMENT OF HYPERTENSION IN ACUTE STROKE PATIENTS IN TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: The study aimed to manage the hypertension in acute stroke patients in a tertiary care hospital with effective anti-hypertensive drugs. **Methodology:** An observational study has been guided in the in-patient ward of neurology department in tertiary care hospital. The data was collected from the in-patient department, considering inclusion and exclusion criteria for six months and a total of 135 patients were analysed with data collection forms. Blood pressure was monitored throughout the day before and after admiration of a drug. The average mean arterial pressure was calculated per day. Statical tools like Anova test were applied to the data by using SPSS software. **Result:** In our study among 135 patients, 64% were males and 36% were females, our study has relatives' high number of patients i.e., 51.1% above the age group 61 years, whereas 444 & 44 is in between the age group of 41-60 & 20-40. There is a significance difference observed, between telmisartan and nifedipine (p=0.02.0.03). This concludes telmisartan is effective when compared to nifedipine and in between nifedipine and Labetalol (p=0.040.003), this concludes that nifedipine is effective than labetalol. **Conclusion:** In this study, we concluded that Telmisartan and labetalol was found to be effective with fewer side effects for managing the hypertension in acute stroke patients.

KEYWORDS: Hypertension, Ischemic stroke, Haemorrhagic stroke, Transient ischemic attack, Telmisartan. Amlodipine, Nifedipine, Metoprolol, Perindopril, labetalol.

INTRODUCTION

Stroke is also called as brain attack or cerebrovascular accident. Stroke is a disease in which brain burst and bleeds or obstruction of blood supply to the brain. The burst or obstruction stop blood and oxygen supply to the brain, which leads to the damage of brain blood cells and tissues, then begin to die within minutes.[1] Stroke is up 3 types, and they are Ischemic stroke, Haemorrhagic stroke, and Transient ischemic stroke. Brain attack is one of the leading causes of death and disability in India, and stroke is the third major cause of death and disability in India.[2]

Blood pressure is the pressure exerted by using circulating blood in opposition to the partitions of the body's arteries, the major blood vessels in the body. Hypertension is when blood pressure is as high in blood vessels when the coronary heart contracts or beats. The 2nd (diastolic) fluctuate represents the pressure in the vessels when Blood pressure can be written as two numbers. The first (systolic) range represents the stress the coronary heart rests between beats. Hypertension is diagnosed if, when it is measured on two then again magnificent days, the systolic blood stress readings on each and every day is 2140 mmHg and/or the diastolic blood stress readings on each and every day is >90 mm Hg.[3]

About 31% of the population (7.2 Americans) have high BP 140/90 mm Hg). The share of men with high BP is higher than that of women previously than the age of 45 years, alternatively between a lengthy time of forty-five and fifty-four years the share is barely greater with women.[4] Estimated 1.28 billion adults aged 30-79 years international have hypertension, most (two-thirds) dwelling in low- and middle-income countries. An evaluated 46% of adults with hypertension are ignorant that they have the condition.[5]

For managing the hypertension in acute stroke patients, we use drugs like Beta blockers, Calcium channel blockers, ACE inhibitors, Diuretics etc.

MATERIALS AND METHODS
This is an observational study of the duration of 6 months in the Neurology department at Kamineni hospital. Patients were confirmed by physicians diagnosed with acute stroke by having hypertension, were further examined consecutively for social, demographical, and clinical variables for evaluation of patterns of Hypertensives. A data collection form will be designed and approved by the hospital preceptor to collect the subject's demographic and disease specific aspects Like age, gender, past medication history, present medical history. Inclusion criteria were the people who have extended with acute stroke and have age above 18 years old. Patients aged below 18 years, pregnant and lactating women are excluded from the study.

STATISTICAL ANALYSIS
The data were statistically analysed by using MS-EXCEL and statistical package for social sciences (SPSS Version-22, IBM) software. Statistical tool Anova test was executed to estimate the p value between the different collected data like age, gender, management of B.P like average systole and average diastole of different drugs. P value was set at 0.05 and confidence interval was 95%.

RESULTS
A total of 135 patients of having acute stroke with hypertension screened according to our inclusion criteria. Among them men were 64% and female were 36%. Most of the patients were affected between the age group of 41-60.

Table-1 indicates the gender distribution and their percentage
Table-1

S.no	Gender	No of individuals	Percentage
1	Male	87	64%
2	Female	48	36%
Total		**135**	**100%**

Table-2 indicates the age wise distribution of stroke patients, among them 6 people fall within the age group of 20-40, 60 people within the age group of41-60, 69 people fall within the age group of >61
Table-2

S.no	Age	Male	Female	Percentage
1	20-40	3	3	4.44%
2	41-60	42	18	44.4%
3	>61	39	30	51%
Total		84	51	100%

Drug therapy results
Telmisartan drug-average systolic pressure
Table 3 indicates average systolic pressure before & after administration of telmisartan among different age groups.
Table-3

Age	Before drug administration	After drug administration
20-40	140	124
41-60	141	121
>61	134	117

Telmisartan drug-average diastolic pressure
Table-4 indicates average diastolic pressure before & after administration of telmisartan among different age groups.
Table-4

S.no	Age	Before drug administration	After drug administration
1	20-40	86	74
2	41-60	83	76
3	>61	82	73

Amlodipine drug-average systolic pressure
Table-5 indicates average systolic pressure before & after administration of amlodipine among different age groups.
Table-5

S.no	Age	Before drug administration	After drug administration
1	20-40	0	0
2	41-60	136	117
3	>61	132	118

Amlodipine drug-average diastolic pressure
Table-6 indicates average diastolic pressure before & after administration of amlodipine among different age groups.
Table-6

S.no	Age	Before drug administration	After drug administration
1	20-40	0	0
2	41-60	89	73
3	>61	84	74

Nifedipine drug-average systolic pressure
Table-7 indicates average systolic pressure before & after administration of nifedipine among different age groups.
Table-7

S.no	Age	Before drug administration	After drug administration
1	20-40	163	112
2	41-60	151	123
3	>61	150	122

Nifedipine drug-average diastolic pressure
Table-8 indicates average diastolic pressure before & after administration of nifedipine among different age groups.
Table-8

S.no	Age	Before drug administration	After drug administration
1	20-40	81	76
2	41-60	91	78
3	>61	87	77

Perindopril drug-average systolic pressure
Table-9 indicates average systolic pressure before & after administration of perindopril among different age groups.
Table-9

S.no	Age	Before drug administration	After drug administration
1	20-40	0	0
2	41-60	163	130
3	>61	0	0

Perindopril drug-average diastolic pressure
Table-10 indicates average diastolic pressure before & after administration of perindopril among different age groups.
Table-10

S.no	Age	Before drug administration	After drug administration
1	20-40	0	0
2	41-60	76	73
3	>61	0	0

Metoprolol succinate drug-average systolic pressure
Table-11 indicates average systolic pressure before & after administration of metoprolol among different age groups.
Table-11

S.no	Age	Before drug administration	After drug administration
1	20-40	0	0
2	41-60	0	0
3	>61	142	124

Metoprolol succinate drug-average diastolic pressure
Table-12 indicates average diastolic pressure before & after administration of metoprolol succinate among different age groups.
Table-12

S.no	Age	Before drug administration	After drug administration
1	20-40	0	0
2	41-60	0	0
3	>61	88	78

Labetalol drug-average systolic pressure
Tabllle-13 indicates average systolic pressure before & after administration of labetalol among different age groups.

Table-13

S.no	Age	Before drug administration	After drug administration
1	20-40	184	140
2	41-60	162	131
3	>61	159	122

Labetalol drug-average diastolic pressure
Table-14 indicates average diastolic pressure before & after administration of labetalol among different age groups.
Table-14

S.no	Age	Before drug administration	After drug administration
1	20-40	106	77
2	41-60	100	80
3	>61	89	73

ANOVA TEST

systolic pressure before drug administration	mean	standard deviation	F value	P value
Nifedipine	154.08	14.478		
Telmisartan	144.65	14.644		
Labetalol	137	12.198	4.293	0.001
Perindopril	149	22.627		
Amlodipine	142	13.645		
Metoprolol	149	22.627		
systolic pressure after drug administration				
Nifedipine	140.54	9.627		
Telmisartan	133.67	8.005		
Labetalol	130	8.577	3.512	0.005
Perindopril	131	1.414		
Amlodipine	135	7.805		
Metoprolol	139	12.728		
Diastolic pressure before drug administration				
Nifedipine	94.33	8.993		
Telmisartan	87.11	6.581		
Labetalol	87.93	4.301	6.429	0.001
Perindopril	85	9.899		
Amlodipine	86.50	3.757		
Metoprolol	93.50	2.121		
Diastolic pressure after drug administration				
Nifedipine	81.90	5.639		
Telmisartan	77.70	9.480		
Labetalol	73.93	1.870	4.015	0.002
Perindopril	75.50	0.707		
Amlodipine	76.36	2.274		
Metoprolol	81.00	1.414		

Anova test was performed by means of SPSS software between the below discussed parameters in the table more over P value was clinically significant (<0.05).

The below table shows information regarding mean, standard deviation, F value and P value

There is a significance difference observed, between telmisartan and nifedipine (p =0.02,0.03). This concludes telmisartan is effective when compared to nifedipine and also in between nifedipine and labetalol (p=0.04,0.003). this concludes that nifedipine is effective than labetalol.

DISCUSSIONS
"ANOBSERVATIONAL STUDY- MANAGEMENT OF HYPERTENSION IN ACUTE STROKE PATIENTS IN A TERITORY CARE HOSPITAL." It was conducted in tertiary care hospital considering only in-patients. The data was collected for 135 patients using data collection form.

In our study among 135 patients, 64% were males and 36% were females. our study has relatives' high number of patients i.e., 51.1% above the age group 61 years, whereas 44.4 & 4.4 is in between the age group of 41-60 & 20-40.

In our study, the patients who had administered telmisartan have average systolic and diastolic pressure before and after administration among different age groups were like 140/86, 124/74 in 20-40 years, 141/83, 121/76 in 41-60 years, 134/82, 117/73 in >61 years.

In our study, the patients who had administered amlodipine have average systolic and diastolic pressure before and after administration among different age groups were like 136/89, 117/73 in 41-60 years, 132/84, 117/73 in >61 years.

In our study, the patients who had administered nifedipine have average systolic and diastolic pressure before and after administration among different age groups were like 1163/81,112/76 in 20-40 years, 151/91, 123/78 in 41-60 years, 150/87, 122/77 in >61 years.

In our study, the patients who had administered perindopril have average systolic and diastolic pressure before and after administration among different age groups were like 163/76, 130/73 in 41-60 years.

In our study, the patients who had administered metoprolol have average systolic and diastolic pressure before and after administration among different age groups were like 142/88, 124/78 in >61 years.

In our study, the patients who had administered labetalol have average systolic and diastolic pressure before and after administration among different age groups were like 184/106, 140/77 in 20-40 years, 162/100, 131/80 in 41-60 years, 159/89, 122/73 in >61 years.

It was observed from our study, that few patients who had administered telmisartan have side effects like nausea, vomiting and adverse effects like increased serum creatinine levels was found.

Anova test was performed for our study using SPSS software. It showed that the p value was clinically significant for all.

CONCLUSION
In this study, we concluded that telmisartan and labetalol was found to be effective with fewer side effects for managing the hypertension in acute stroke patients.

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