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PRESCRIBING PATTERNS AND HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH HYPERTENSION IN A TERTIARY CARE HOSPITAL

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ABSTRACT

The present study was aimed to know the prescribing patterns to identify the benefits of single and combination therapy by using prescription, and also Health Related Quality of Life in patients with Hypertension, by using European Questionnaire-5 Dimension scale. Total number of patients evaluated for the study were 50, among them 25 were females and 25 were males. In prescription, calcium channel blockers (62%) were most commonly prescribed as a single drug therapy compared to other classes of drugs in current, past & discharge medication. Among combinations, Diuretics and Angiotensin Receptor Blockers have been prescribed 47%, followed by Calcium Channel Blockers and Beta blockers (30%), Diuretics and Angiotensin Converting Enzyme inhibitors (13 %), diuretics and Calcium Channel Blockers (8%). Patients having age group of 30-49 showed 100% in morbidity, self-care, usual activities, while 30% in pain/discomfort, anxiety/self-care dimensions during pre-admission period, while post admission showed 100% in all 5Dimensions. Almost all age groups have improved their health in post admission when compared to pre-admission period.

KEYWORDS: Hypertension, Health Related Quality of Life, Prescribing Patterns, European Questionnaire-5 Dimensions.

INTRODUCTION

Hypertension is a serious condition that affects one in three adults in the United States, according to the Centers for Disease Control and Prevention. It's called the "silent killer"

because people often have no symptoms, yet it can lead to some serious and sometimes even fatal condition because of the associated morbidity and mortality which impair quality of life and cost to society.[1]

Hypertension is estimated to affect 972 million adult worldwide, with 66% of those affected were from low and middle income countries. It is estimated that the worldwide prevalence of hypertension would increase from 26.4% in 2000 to 29.2% in 2025.[1]

Most patients with hypertension require two or more antihypertensive medications. Thiazide diuretics, β-blockers, angiotensin converting enzyme inhibitors, angiotensin receptor blockers and calcium channel blockers have all been shown to reduce complications of Hypertension and may be used for initial drug therapy.[6]

Health-related quality of life is a multi-dimensional element of well-being affected by the physical, mental, emotional and social status of patients, used to assess the health status of the general public and patients as well as the impact of health care interventions.[4]

Hypertension impairs vitality, social functioning, mental health, mood and psychological functioning, presence of complications and comorbidities influences the Health-related quality of life in hypertensive patients more than hypertension itself.[4]

European Questionnaire-5 Dimensions, a well-known generic Health-related quality of life instrument consisting of five dimensions: mobility, self - care, usual activities, pain/discomfort and anxiety/depression is used for hypertension.[5]

METHODOLOGY

The study was conducted at Sri Adichunchanagiri Hospital and Research Center, B.G. Nagara. It was a Prospective and Observational study and was carried out over a period of nine months from February 2013 to July 2013.

Method of collection of data

- Patient interview
- Patient case note/prescription
- Patient health related quality of life documentation form - European Questionnaire-5 Dimensions.
- Patient consent form.

- Patient data collection form

Inclusion criteria

- In-patients newly diagnosed as hypertension male and female patients in the age group of 20 to 80 years.

Exclusion criteria

- Patients without two or more comorbidities.
- Patients who are not willing to give the consent form
- Pregnant/lactating women

RESULTS

Patient Demographic Data

Table 1: Age wise distribution of patient with hypertension

Age In Years	Number of patients	Percentage
<30	0	**0**
31-50	**19**	**36**
51-70	**24**	**48**
>70	**7**	**14**

MEAN±SD: 57.1±12.18

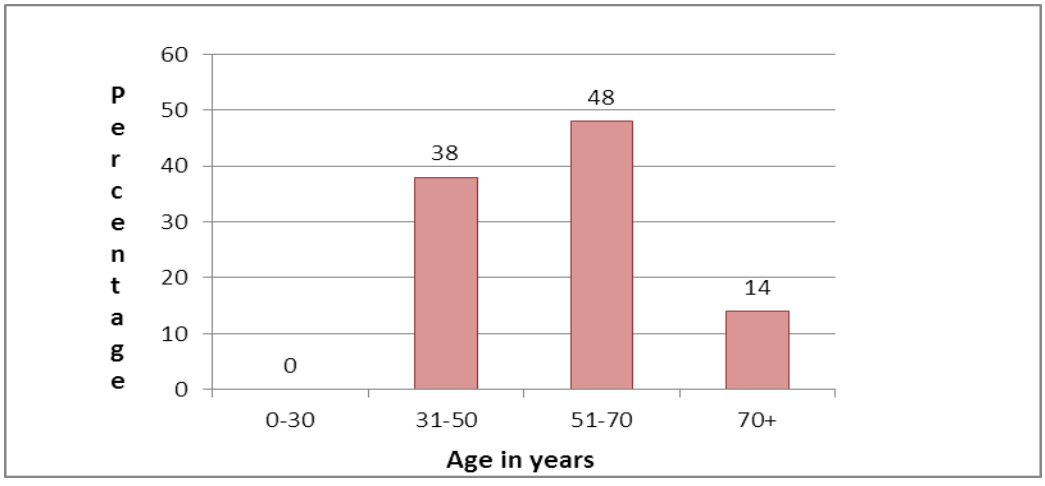

Figure: 1

Table 1 & figure1 shows that more number of patients within the age group of 51-70 years and constitute 48% of sample. Mean age of the patient having interactions is Mean ± SD: 57.1±12.18years.

Table 2: Gender wise distribution in hypertensive patients

Gender	Number of patients	Percentage
Male	25	50.0
Female	25	50.0
Total	50	100

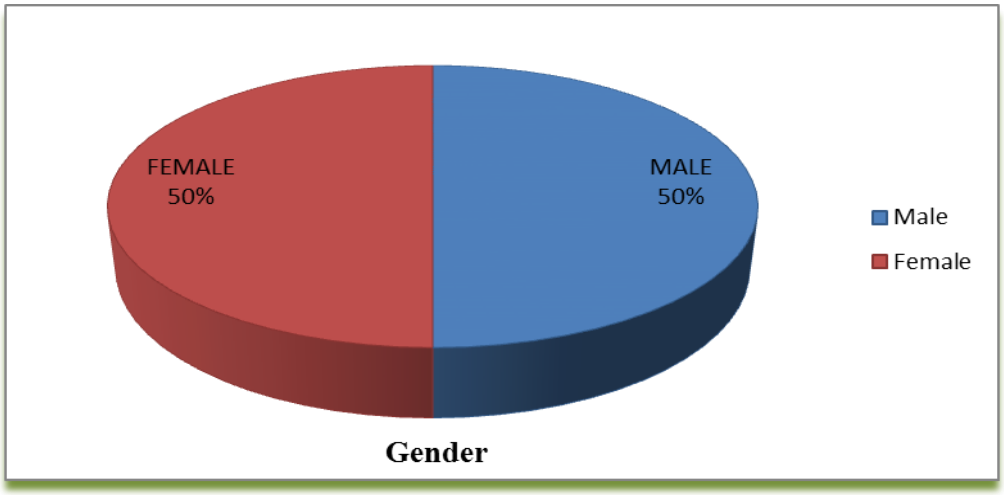

Figure: 2

Table 2 & figure 2 indicates that equal number of males and females constituted in the sample. Out of 50 subjects 25(50%) are males and 25 (50%) are females.

Table 3: Number of Patients According To Weight and Age Groups.

Weight in kgs	<30	31-50	51-70	>70
<60	0	4	1	0
60-70	0	13	15	4
>70	0	2	8	3

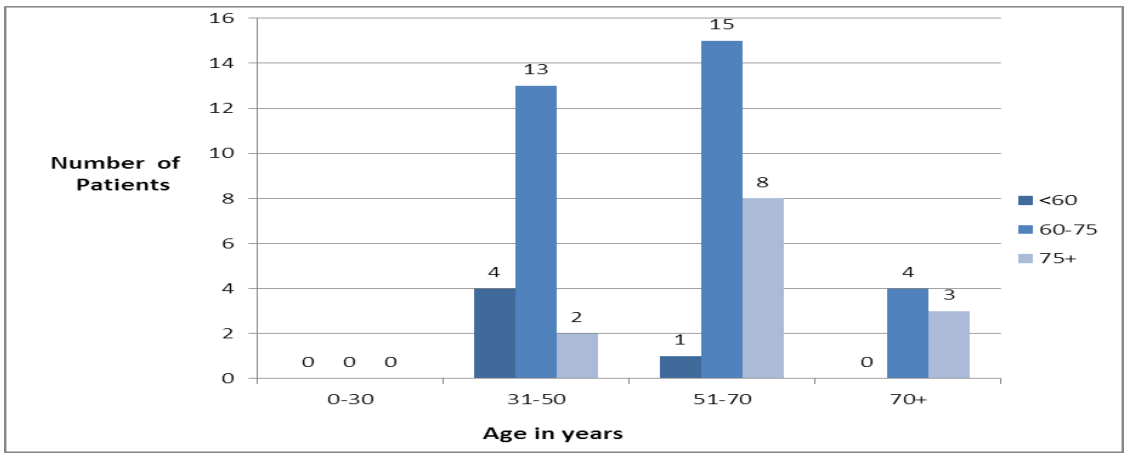

Figure 3

Table 3 & figure 3 shows that the weight of 60-75 kgs and age groups of 51-70 are more prone to get hypertension. Out of 50 patients 30% were under the age group of 51-70 years.

Table 4: Single Drug prescribed in overall (past, current, discharged) period to Hypertensive patients.

Table 4: Overall medication been prescribed as a single drug.

Class of drugs	Number of times prescribed	Percentage
1. Diuretics	0	0
2. Beta blockers	2	2.29
3. ACE inhibitor	8	9.19
4. CCBs Blockers	54	62
5. ARBs	23	26.4
6. Alfa Blockers	0	0

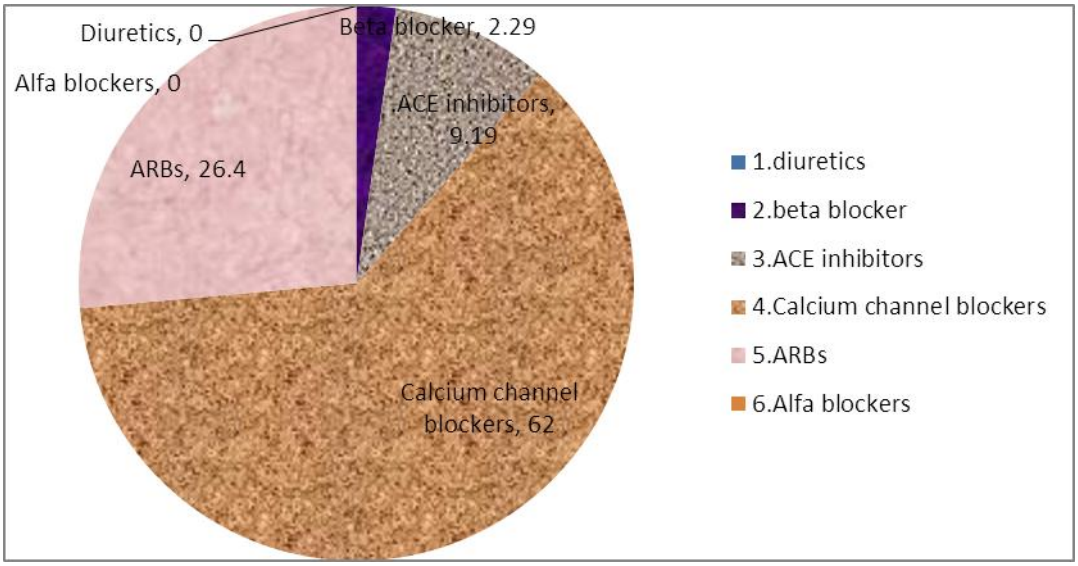

Figure 4

Table 4 & Figure 4 shows that Calcium channel blockers (62%) prescribed more as a single drug when compared to other classes of drugs in current, past & present medication as single drug therapy to hypertensive patients.

Table 5: Single pill combination drugs prescribed for overall (past, current, discharged) period in Hypertensive patients.

Single Pill Combination of Drugs	Number of times prescribed	Percentages
Diuretics+ACE inhibitors	3	13.0
Diuretcs+ARBs	11	47.0
CCBs+Beta blckrs	7	30.0
Diuretics+CCBs	2	8.0

Table 6: Combination of Drugs prescribed for overall (current, medication and discharge medication) period in hypertensive patients.

Drug Combinations	No of times prescribed	percentage
5+1	11	26.1
4+2	7	16.6
3+1	2	4.7
4,3	9	21.4
4,5	2	4.7
2,5	2	4.7
1,4	3	7.1
1,3	1	2.3
4,2	1	2.3
4,2,3	1	2.3
4,(3+1)	1	2.3
5,(1+4)	1	2.3
4,5,(1+4)	1	2.3

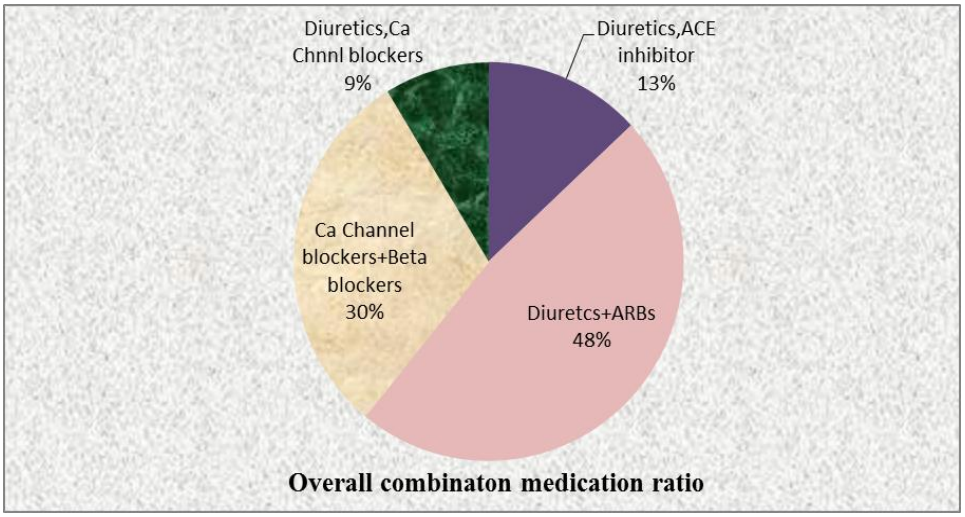

Figure 5

Table 5 and Figure 5 shows the single pill combination in patients. Among them Diuretics combination with ARBs have been prescribed 46% followed by Calcium channel blockers with Beta blockers(30%) and Calcium channel blockers with Diuretics(13%) and ACE inhibitors with Diuretics (9%) have been prescribed very least.

- 5+1 (ARBs + Diuretics)
- 4+2 (CCBs + Beta Blockers)
- 3+1 (ACE inhibitors + Diuretics)
- 4,3 (CCBs and ACE inhibitors)
- 4,5 (CCBs and ARBs)

- 2,5 (Beta blockers and ARBs)
- 1,4 (Diuretics and CCBs)
- 1,3 (Diuretics and ACE inhibitors) 4,2 (CCBs and Beta blockers)
- 4,2,3 (CCBs, Beta blockers and ACE inhibitor)
- 4,(3+1) - CCBs and (ACE inhibitors + Diuretics)
- 5, (1+4) - ARBs and (Diuretics + CCBs)
- 4,5, (1+4) – CCBs, ARBs and (Diuretics + CCBs)

Table 7: Overall Single vs combination medications in hypertensive patients.

Medication Type	Number of times prescribed	Percentage
Single	87	67.4
Combination of drugs	42	32.5

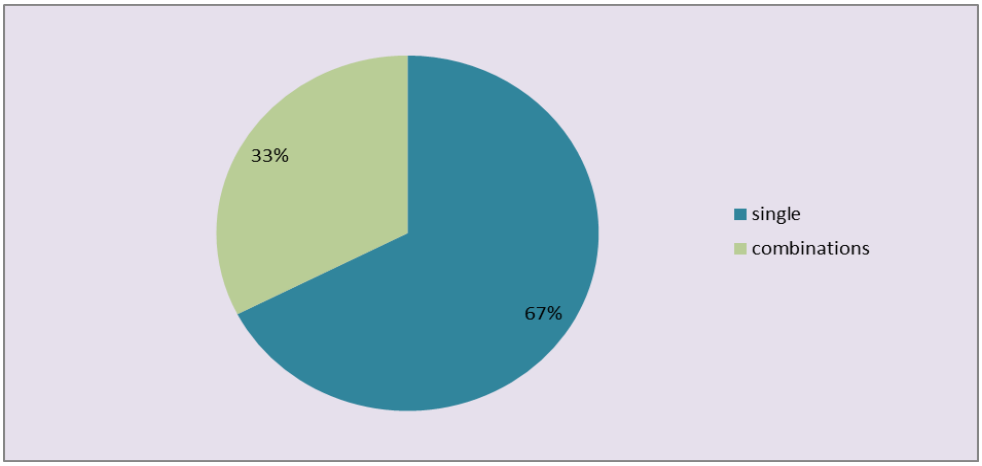

Figure 6

Table 7 and Figure 6 shows that among single and combination therapy, single therapy (67.4%) has been used more frequently when compared to combination therapy (32.5%).

Table 15: EQ-5D Questionnaire for Hypertensive patients related to pre admission:

Age	mobility		Self-care		Usual activities		Pain		Anxiety	
	NP	P	NP	P	NP	P	NP	P	NP	P
30-49	14	0	14	0	14	0	9	5	9	5
50-69	11	13	15	9	8	16	6	18	8	16
70+	2	10	3	9	2	10	1	11	1	11

NP- No problem, P- Problem.

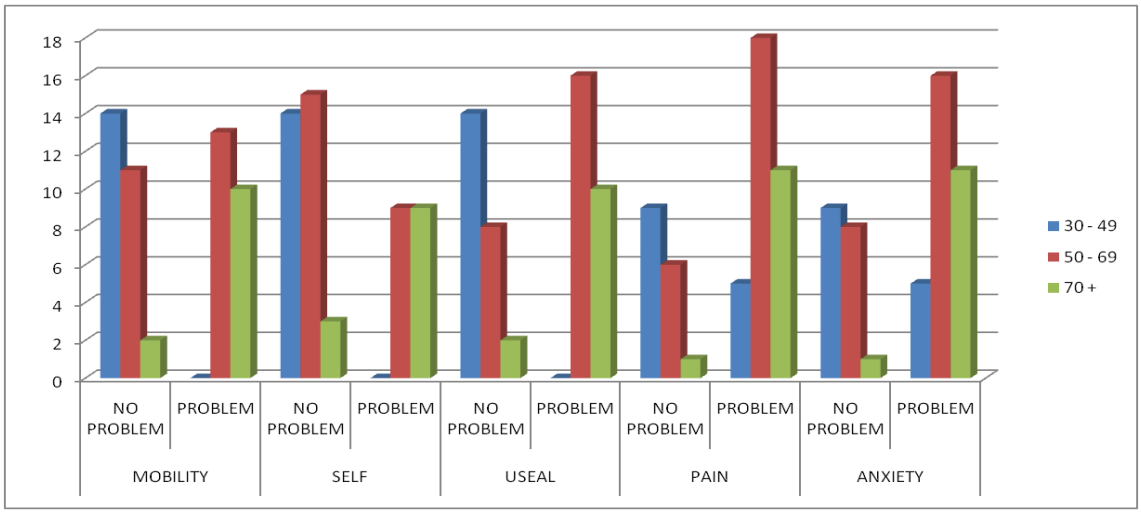

Figure 13: Number of patients associated with Problems and without problems according to 5 dimensions(Mobility, Self-care, Usual activity, Pain, Anxiety/ of Questionnaire

Table 15 and Figure 13 shows patients within a age group 0 - 49 has 100% problem on first 3Ds where as 30% of patients have reported problems in last 2Ds. 50% of Patients with in age group 50 - 69 has no problem on first 2Ds where as 70% of patients have reported problems in last 3Ds. While 90% of patients with age group above 70years have reported problems in all 5Ds.

Table 16: EQ-5D Questionnaire for Hypertensive patients related to post admission (before discharge).

Age	score	MOBILITY	SELF CARE	USUAL ACTIVITIES	PAIN/DISCOMFORT	ANXIETY OR DEPRESSION
30 - 39	1	100	100	100	100	100
	2	0	0	0	0	0
	3	0	0	0	0	0
40 - 49	1	100	100	100	57	53
	2	0	0	0	43	47
	3	0	0	0	0	0
50 - 59	1	50	64	29	7	22
	2	50	36	71	93	71
	3	0	0	0	0	7
60 - 69	1	40	60	40	50	50
	2	60	40	60	50	50
	3	0	0	0	0	0
70 - 79	1	20	30	20	10	10
	2	70	20	30	90	90
	3	10	50	50	0	0
80+	1	0	0	0	0	0
	2	100	100	100	50	100
	3	0	0	0	50	0

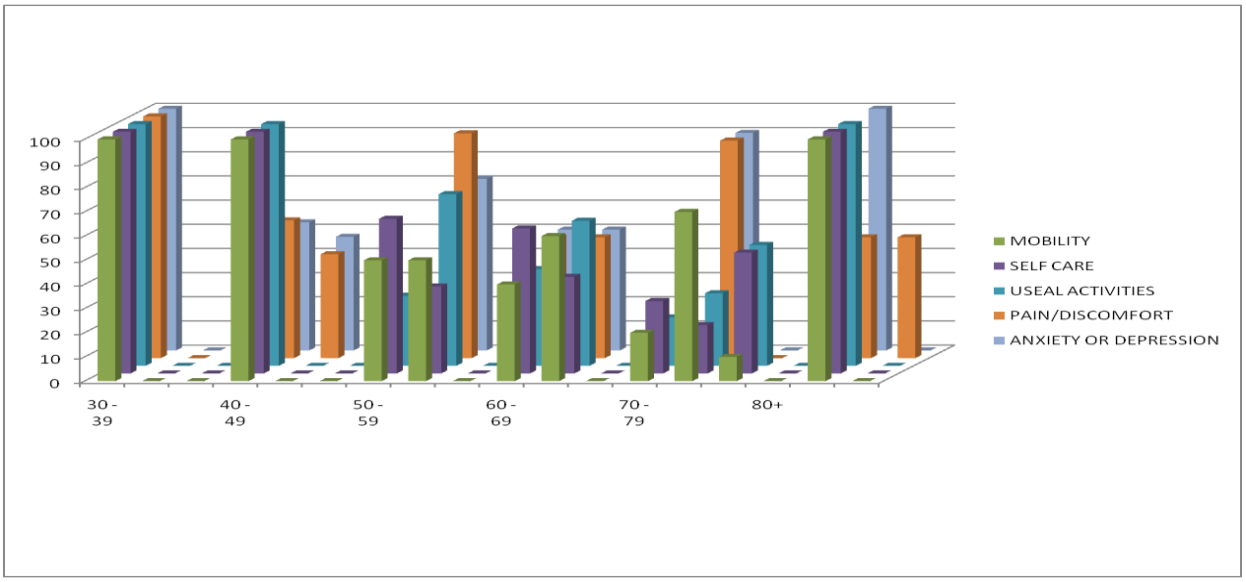

Figure 14: Number of patients associated with Problem, some problems and without problem according to 5 dimensions (Mobility, Self-care, Usual activity, Pain, Anxiety/ of Questionnaire) in post history.

Table 16 and Figure 14 shows patients within a age group 30-39 has 100% on first 5 Ds ,age group of 40-49% showing100% on first 3Ds and around 50% out of 100 showing moderate problems in Pain and discomfort. Moreover all members in the age group of 80+ showing problems and some problems.

Table 17: EQ Visual Analogue Scale in Hypertensive patients.

score	0-30	31-50	51-70	>70
0-30	0	1	0	2
31-60	0	2	10	7
>60	0	19	14	0

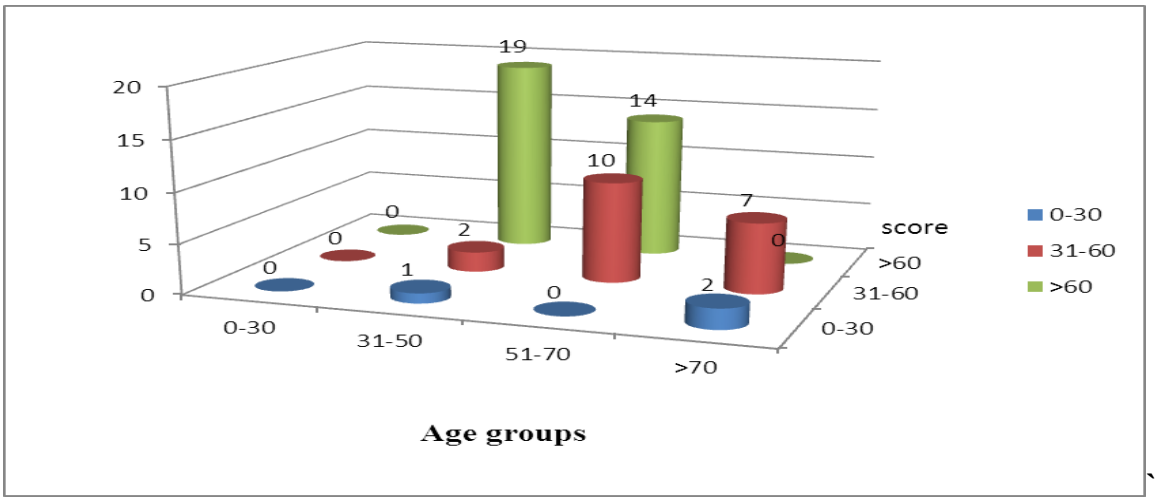

Figure 15: Hypertensive patients health related quality of life according to EQ VAS compared to age groups.

Table 17 and Figure 15 shows age of 31-50years patients observed with scores above 60 out of 100.whearas the age group of above 70 showing least scores of 0-30.

DISCUSSION

A prospective observational study was conducted among Out Patients as well as inpatients admitted to Adichunchanagiri Institute of Medical Sciences, B.G. Nagara for management of hypertension alone without any complications and comorbidities.

Age, Gender and weight distribution of Hypertensive patients

Total Hypertensive patients enrolled under the study group were (n=50), and has equal distribution of males (50%) and females (50%). Halemani SS (2012) who conducted a study had slightly higher number of male population (51.42%) than females (48.58%).[1]

In the study group patients aged from 32 – 80 years were enrolled and most of the patients were in the age group of 51-70 years. With patients were weighing minimum of 52 kgs and maximum of 92 kgs and most of them weighing around 60-75 kgs. It was observed that majority of patients were of normal weight.

When age and weight of hypertensive patients were taken into consideration, patients of age group 51-70 years and weighing 60-75kgs were more prone for developing hypertension, thereby special precautions should be taken in treating patients with the above age and weight.

Prescription patterns for Hypertension

Our study shows calcium channel blockers are the most prescribed mono therapy drug for hypertension about (62%), followed by Angiotensin Receptor Blocker's (26.4%), Angiotensin Converting Enzyme inhibitors (9.19%) and beta blockers (2.29%).Similar results were published by author Mohd A. H et al; in 2012 show Calcium Channel Blockers 37% as most prescribed monotherapy drug followed by Angiotensin II receptor antagonists 21%.

Patients on single pill combination therapy, Diuretics and Angiotensin Receptor Blocker's (47%) were preferred most followed by Calcium Channel Blockers and beta blockers (30%), diuretics and Angiotensin Converting Enzyme (13 %) and diuretics and Calcium Channel Blockers (8%).

- Pavani V et .al (2012) found that Diuretics and Angiotensin Receptor Blockers (71%) were most preferred combination therapy in hypertensive patients.

- Patients on multiple drug combinations had combination of two drug therapies (69%) more than 3 (23%) or 4 (7.2%) drug combinations.
- These findings are corroborate with study conducted by Rimoy.G.H (2008) where documented combination of two drug therapy (28.3%) more than 3 (24.7 %) or 4 (11.8%) drug combinations.
- Overall prescribing patterns suggested that monotherapy (67.4%) was used more frequently than combination therapy (32.5%). Similar results were published by author Bhardwaj A (2012).

Health related quality of life in Hypertensive patient by using EQ-5D Questionnaire.

HRQOL of patients was compared pre-admission and post admission (before discharge) by using 5 dimensions scale i.e morbidity, self-care, usual activities, pain/discomfort, anxiety/self-care.

Age group of 30-49 has showed 100% in first 3Ds and 30% in other 2Ds during pre-admission period, while post admission (before discharge) showed 100% in all 5Ds. All most all age groups have improved in post admission when compared to pre-admission period.

When asked patient condition by using EQ visual analogue scale at the time of hospital stay to assess Health Related Quality of Life (HRQoL), patients in the age group of 31-50 years scored 60-100, whereas patients aged above 70 scored ranging from 0-30. Patients aged 31-50 years scored better when compared to older age group.

CONCLUSION

The study confirms that health related quality of life in patients with hypertension before discharging the patient showed improvement compared to prior admission. Compliance of the therapy is pivotal and helps in controlling hypertension along with preventing further progression and complications. The study also shows that lifestyle modification seems to play an important role along with drug therapy in effective control as well as improving health related quality of life in patients.

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