



Original Article

Measurement of Outcomes in Hypertensive Patients with Relation to Counselling

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Aim and objectives: the main aim of the study is to measure the outcomes in hypertensive patients with relation to, counselling in terms of lifestyle modifications, diet, risk factors, complications, signs and symptoms by providing patient information leaflet. The objective is to evaluate the impact of patient counseling in terms of QOL, KAP and medication adherence.

Materials and methods: an observational prospective study was conducted over a period of 6 months i.e., from february to july 2015 in the department of general medicine, government general hospital, guntur. The patients were counseled and patient information leaflets were given for knowledge enhancement. Then the patients were assessed in terms of medication adherence, KAP and QOL by using validated questionnaires. Further follow ups and counseling were done on patient visits for their review or telephonically. Assessment of all collected data was statistically analyzed.

Results: a total of 134 hypertensive patients were included in the study but only 107 patients of them were enrolled in the study as per the inclusion and exclusion criteria and counseling was done. The p value in terms of medication adherence and KAP was calculated and found to be *p = <0.0001, which is considered to be statistically significant. The QOL was found to be significantly improved in terms of anxiety/depression and pain/comfort.

Conclusion: our study concluded that pharmacist mediated patient counseling was effective in improving disease knowledge, drug compliance and quality of life.

Key words: Hypertension (HTN), patient counseling, patient information leaflets (pils), drug compliance, life style modification, quality of life.

1. INTRODUCTION

Hypertension is a very common chronic disease in rural, urban and semi urban areas of today's world, which needs continuous monitoring and treatment throughout the life. Hypertension is an important public health challenge because of the associated

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morbidity and mortality caused by cardiovascular diseases and the cost to society ¹.

The high prevalence of hypertension in the community is currently being driven by two phenomena: the increased age of the population and the growing prevalence of obesity, which is seen in developing as well as developed countries. Overall prevalence for hypertension in India was 29.8%. Significant differences in hypertension prevalence were noted between rural and urban parts 27.6% and 33.8%. Regional estimates for the prevalence of hypertension were as follows: 14.5%, 31.7, 18.1%, and 21.1% for rural north, east, west, and south India; and 28.8%, 34.5%, 35.8%, and 31.8% for urban north, east, west, and south India, respectively. Overall estimates for the prevalence of awareness, treatment, and control of BP were 25.3%, 25.1%, and 10.7% for rural Indians; and 42.0% (35.2–48.9), 37.6% (24.0–51.2), and 20.2% (11.6–28.7) for urban Indians. Uncontrolled BP accounts for 7.1 million deaths worldwide each year ².

About 33% urban and 25% rural Indians are hypertensive. Of these, 25% rural and 42% urban Indians are aware of their hypertensive status. Only 25% rural and 38% of urban Indians are being treated for hypertension ³.

Role of Patient Counselling In Hypertension

Patient counseling may be defined as providing medication information orally or in written form to the patients or their representative or providing proper directions of use, advice on side effects, storage, diet and life style modifications. It involves interaction between a pharmacist and a patient and/or a care giver. It is interactive in nature.

Safe and effective drug therapy depends on patients being well-informed about their medication. Healthcare is provided in India at primary, secondary and tertiary healthcare levels, and at each level most patients receive medication as part of their treatment. Most

pharmacists in community pharmacies and hospitals have not been educated and trained for this role, and have largely remained as prescription-fillers or dispensers. Lack of information may lead to the patient not taking the medication in the way that was intended, which ultimately result in therapeutic failure, adverse effects, additional expenditure on investigations and treatment or even hospitalization. However, a clinical pharmacist has good knowledge towards drug use and can provide enough information in hospitals can minimize above mentioned aspects through counseling. Patient information leaflets (PIL) are written information leaflets in simple language about the patient's illness and its treatment, including medications and relevant lifestyle changes ⁴ Therefore in chronic diseases such as hypertension we can contribute to positive outcomes by educating and counseling patients to prepare and motivate them to follow their pharmacotherapeutic regimens and monitoring plans.

2. METHODOLOGY

Study Site: Department of General Medicine (OP block) Government General Hospital, Guntur, A.P

Study Design: It is a Prospective Observational Study.

Study Period: The study was planned and carried out for a period of 6months from February to July 2015.

Study Criteria:

a) Inclusion Criteria

- Patients above 30 years of age (Irrespective of Gender).
- Patients with or without co morbid conditions.
- Patients who visit OP block of General medicine department

b) Exclusion Criteria

- Pregnant and lactating women.
- Patients who are not willing to be consent.
- Patients who do not attend consecutive visits.

Study Procedure:

A Prior Permission was taken from the Ethics Committee to Conduct the Study. The Whole Study was then conducted in Various Steps:

Step1: Designing and Validation of Patient Information Leaflet by medical experts.

Step 2: Translation of the KAP, and MMAS Questionnaire into Regional Language (Telugu) and their Validation by Telugu professionals.

Step 3: Obtaining Telugu Version of EQ-5D-3L-3L Questionnaire from the Euro-QOL Group

Step 4: Assessing the Knowledge, Attitude, Practice (KAP) and QOL of Patients Before and after Counselling.

A well designed and Pre-validated Patient Information Leaflet was used in the study. The study participants who were willing to join in the study were analyzed for their knowledge, attitude, practice and quality of life as baseline reading. Later the patients were provided with the PIL followed by counselling on hypertension. At last the KAP of participants after counselling was determined at final follow up. Where QOL was analyzed at two follow-ups after counseling. The difference in the KAP, Medication adherence and QOL before and after counselling was determined statistically by calculating P value using SPSS Statistical software (version 21) and Graph pad Prism (version 5.10).

3. OBSERVATIONS AND RESULTS

Gender and Age Wise Distribution of Patients: Out of 134 participants, 55 (41.40%) Patients are men and 79(8.90%)Patients are females. As per our study female participants are more compared to males. With regard to age the majority of the Participants (40) fall in the age group of 51-60 years and only a single participant was from above 80years of age group. Whereas the mean age of onset of hypertension was found to be 55.96±11.4.

Duration of Onset of Hypertension in Study Population

Among 134 participants, duration of hypertension in the study subjects is as follows; 61 participants in our study falls in 1-5 years duration group, and 8 participants are suffering with hypertension from more than 15 years.

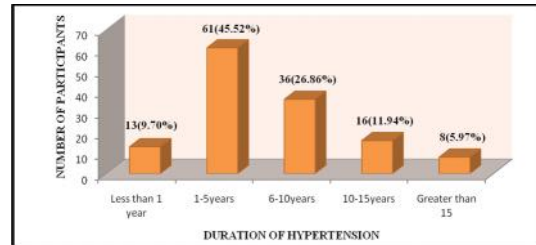


Fig1: Duration of hypertension in study participants

Table 1: Comparison of Mean Blood Pressure Values at Baseline and Follow Up

Blood pressure (mm Hg)	Baseline (n=134)	End of the study (n=107)
Mean systolic	144.7 mm Hg	137.6 mmHg
Mean diastolic	92.2 mm Hg	86.9 mm Hg

The mean systolic and diastolic BP Values were found to be decreased at the end of the study (after counselling) when compared to the baseline values (before counselling).

Categorization of Family History: Among 134 participants, 37 participants are having significant family history, 9 Participants are not aware about their family history and 88 participants are not having family history of hypertension.

Categorization of Study Participants Based on Social History: 21 participants (15.67%) of the total subjects are alcoholic. 36 participants (26.86%) of the total subjects are smokers.

Categorization of educational status: Among the total number of study participants, illiterates are 70 participants, 36 participants are from primary educational status, 16 participants are from secondary educational status and 12 participants belong to graduates category.

Categorization of occupational status: Out of 134 participants, 14 participants are employees (10.44%), 31 participants are self employed (23.13%), Participants coming under daily wage and not working as their occupational status are 52(38.80%)members.

Distribution of Study participants Based on Co-Morbidities

Among the participants, co morbidities of the patients in the study population are as follows: patients with diabetes mellitus are 57, stroke - 17, cardiac problems- 12, renal problems -2, no co-morbidity -53 and others are 11members.

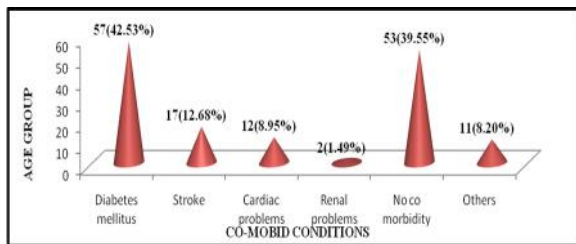


Fig 2: Distribution of Study participants based On Co-Morbidities

Distribution of study Participants Based on Treatment for Hypertension

Of the total study population, however the treatment is as follows; 54 participants were treated with calcium channel blockers, 11 subjects were treated with diuretics, 67 subjects were treated with ACE inhibitors, 7 subjects were treated with ARB's, and 14 persons were treated with blockers.

Assessment of KAP Questionnaire:

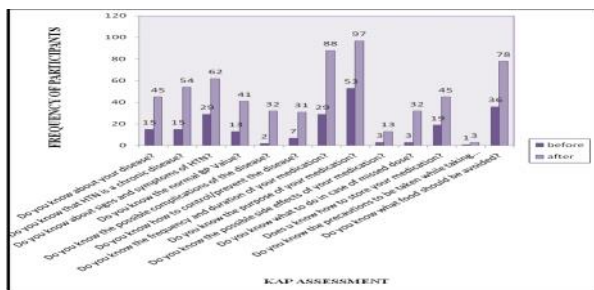


Fig 3: Assessment of KAP questionnaire

Out of 134 subjects of the total study population, 107 subjects came into our criteria and came for consecutive visits. 27 patients are dropouts. Knowledge, Attitude and Practice are assessed by

giving questionnaires to patient before counselling and after consecutive visits.

By using SPSS software (version 21) the chi square value is calculated from which P value was determined. The results were statistically significant before and after counselling showing the impact of patient counselling.

Lifestyle modifications

Out of 107 patients who came for consecutive visits, we have assessed how life style modifications play an important role in controlling of hypertension.

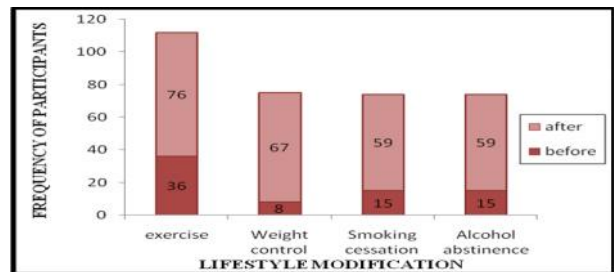


Fig 4: Lifestyle modifications

Distribution of study population by Medication adherence

Statistically significant improvement was found in the medication adherence before and after the patient counselling.

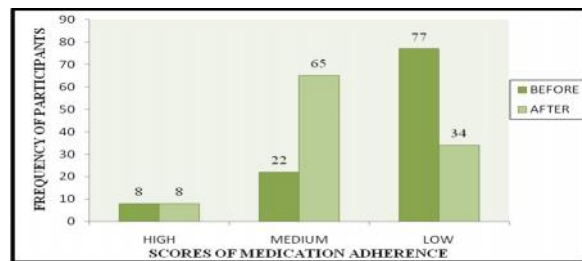


Fig 5: Distribution of study population by medication adherence

Assessment of EQ-5D questionnaire

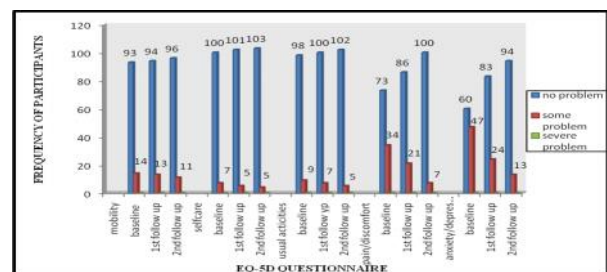


Fig6: Assessment of EQ-5D questionnaire

Out of 134 participants of the total study population, 107 participants came into our criteria and came for consecutive visits. Our drop outs are 27 participants. Quality of life is assessed by giving EQ-5D questionnaire to patient before counselling and after counselling during their consecutive visits.

EQ-VAS Median Scores

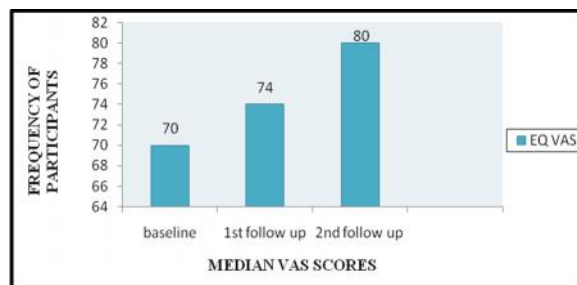


Fig7: EQ-VAS median scores

Fig 7 reveals median scores of EQ-VAS which shows 70 for baseline, 74 for 1st follow up and 80 for 2nd follow up.

4. DISCUSSION

Hypertension is a chronic cardiovascular disease in which the blood pressure is consistently high. The pharmacist mediated patient counselling of hypertensive patients was studied in 134 individuals who were assessed for the KAP, Medication adherence and QOL before and after counselling provided by the pharmacist. A total of 134 eligible patients participated in the study that was conducted during a period of 1st February to 31st July.

In our study females are found to be mostly prevalent with hypertension rather than males with a percentage of 58.9% (n=79). These results do not differ greatly from the percentage males (47.8%) and females (52.2%); males (40.7%) and females (59.3%) reported by similar study^[5, 6] respectively. The values are found to be different from other studies^{7, 8}; in which there is higher percentage of males (51.22%) than females (48.78%); males (52.9%) and females (47%).

The onset of hypertension was found to be high in the age group of 51-60 years with a percentage of 29.85 that has shown results nearly equal to 39.02% and 37.25% reported by the study^{7, 9}. Whereas the values are found to be doubled (72.6%) compared to that of other study¹⁰ respectively. Only one individual of age greater than 80 years was found to have hypertension which is in correlation with the Biradar *et al* study conducted in the south Indian city in which only three individuals of age greater than 80 years were having hypertension.

Considering the family history of the patients it was revealed that more than half members *i.e.*, 88 (65.67%) members are without family history and 37 (27.61%) members are with family history, whereas 9 (6.71%) members are not known about their family history of hypertension. In our study majority of patients 60.45% (n=81) are present with co-morbidities, whereas 39.55% (n=53) members are without any co-morbid condition showing similar results with co-morbidity (58.8%) and without co-morbidity (41.1%) reported by Pawar *et al* study. Out of 81 members, patients are found to be more co-morbid with diabetes mellitus 42.53% (n=57) showing similar results for diabetes percentage of 40% reported by the Naveen *et al* study, followed by cerebrovascular (n=17), cardiac (n=12), other (n=11) and renal (n=2) problems.

The social habits of the subjects revealed that 36 (26.86%) members are having the habit of smoking or chewing tobacco, whereas 21 (15.67%) members are having the habit of taking alcohol that has shown near percentage values for smoking (37.2%) and alcohol (21.5%); smoking (28.6%) & alcohol (20.8%) reported by similar studies^{6, 7, 10}. Considering the educational status of the study population, more number of patients are illiterates with 52.23%, secondary education 11.94%, tertiary education 8.95% which is nearly double to the findings of illiterates (29.4%); secondary

education (25.49%); tertiary education (17.65%) reported by other study.

Whereas the patients with primary education are 27.45% which is nearly equal to 26.86% reported by study [Pawar et. al]; Since the study was conducted in a government general hospital, the majority of the patients are from low economic status with a percentage of 60.44%, followed by medium economic status of 32.08% and percentage of patients with high economic status are 7.46%. These results are contrary to the results of economic status with percentage of low (22), medium (62.7), high (15.3) reported by the respective study [siva et. al].

In our study the majority of the people with hypertension are among the duration of 1-5 years with 61 participants (45.52%), followed by 6-10 years with 36 participants (26.86%) 10-15 years with 16 participants (11.94%); <1 year with 13 participants (9.70%); >15 years with 8 patients (5.97%) has shown nearly similar values with that of the results reported in study¹¹. Considering the educational status of the study population, more number of patients are illiterates with 52.23%, secondary education 11.94%, tertiary education 8.95% which is nearly double to the findings of illiterates (29.4%); secondary education (25.49%); tertiary education (17.65%) reported by other study, however the patients with primary education are 27.45% which is nearly equal to 26.86% reported by study. The study showed significant reduction of mean BP values before and after counselling that is similar to another study.

A total of 107 members were assessed before and after the counselling in terms of the KAP, QOL and Medication adherence. This was performed using a standard validated questionnaire. The post KAP results has shown a significant ($P < 0.0001$) improvement of the patients KAP towards the disease whose results are found be similar to that of study conducted earlier. A

Study conducted in rural hypertensive patients concluded that there was a significant improvement of KAP in test groups when compared with the control groups in the similar study. In terms of medication adherence also marked improvement was found in low and medium scores that were assessed using MMAS. These results are indicating the need for intervention of pharmacist mediated counselling.

Whereas in case of QOL Anxiety/ depression and pain/discomfort was the dimension most frequently noted as causing problems while self-care and usual activities appeared to be the dimensions least affected which is similar to the other study¹², whereas mobility and self-care were found to be affected more in the patients with Co-morbidities rather than patients alone with hypertension. The QOL was found to be more declined in patients with co-morbid conditions rather than with hypertension alone. There was a significant improvement in Anxiety/depression from baseline to final follow-up with the aid of patient counseling. The median EQ-VAS scores were found to be 70 at Baseline, 74 at 1st follow up and 80 by the end of the study.

Future plan of work include future research in other chronic diseases like Diabetes mellitus, Cardiovascular diseases, Human Immuno Deficiency virus (HIV), Asthma and Tuberculosis. This study may consider for future research in large number of population.

5. CONCLUSION

In our study Majority of the patients are unaware that hypertension is a chronic disease and normal range of blood pressure before counseling. Disease related Outcomes can be improved only if there is a strict medication adherence and knowledge towards the disease which can be achieved through patient education. Therefore Pharmacist mediated Counseling enhanced the patient understanding regarding the disease which in turn helps in reducing the

complications. In developing countries like India, though clinical pharmacist evolved in, but still it was not successfully justified. Government should strictly implement the clinical Pharmacist mediated patient counselling programmes that strives in improving the patient outcomes in terms of adherence, QOL, knowledge towards disease and related aspects, thus decreasing the disease related morbidity. Counseling also helps the patient to get improve psychologically and strengthened in fighting against their illness. The successful implementation of awareness programmes in India regarding disease by all health care professionals definitely reduces the morbidity and mortality of Hypertension at major level in upcoming decades. We conclude that there is a dire need of Pharmacist mediated patient counseling regarding the disease, medication adherence and lifestyle modifications for a good Quality of life in chronic diseases.

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