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Research Article

EVALUATION OF MEDICATION ADHERENCE AMONG OSTEOPOROTIC WOMEN IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: Medication adherence is a crucial component in treating chronic diseases like osteoporosis, having a greater influence in patient's condition to a significant extent. It has to be studied in order to decrease the complications induced by co-morbidities like hypertension, hyperthyroidism, diabetes mellitus etc., Elderly patients and those who are on multiple medication that can lead to various adverse events, show a magnificent loss of adherence to the treatment plan which increases the chances of patients not recovering from the illness. Methods: A total of 120 female osteoporotic patients aged 35 years and above were given a 4 item questionnaire (MMAS- Morisky, Green and Levine medication adherence scale) prior to counseling, were scored and counselled accordingly as a measure to improve their medication taking behavior. Results: The study illustrates that 70 (58.3%) patients are non-adherent to the osteoporosis medication, 42 (35%) are having average score and only 8 (6.7%) patients are said to have medication compliance, also people with low knowledge have positive correlation. The elderly patients with comorbid disease (72%) are non-adherent to medication in greater percentage than those without comorbid disease (35%). Conclusion: The patients adherence scores revealed that majority of the cases included were non- adherent. The reasons that we found for non-adherence to medicines were polypharmacy due to other comorbid conditions, old age, forgetfulness and ignorance.

Keywords :- Osteoporosis, Polypharmacy, Medication Adherence.

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INTRODUCTION

Health Organization (WHO) defines Osteoporosis as "A disease characterized by low bone mass and micro-architectural deterioration of bone tissue, leading to enhanced bone fragility and a consequent increase in fracture risk"[1].

Osteoporosis is a disease condition characterised by low bone mass density or deterioration of micro-architecture of the bone. This leads to increased bone fragility, pain and the fracture risk. It is also called as silent killer where most of the people are unaware that they have this condition until experience of fracture for many years without any symptoms [2]. Although osteoporosis-related fractures may occur in almost any skeletal bone the common areas of bone fractures are spine, hips, ribs, and wrists [3].

According to WHO, medication adherence is defined as the "degree to which the person's behaviour corresponds with the agreed recommendations from a

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health care provider"[4]. The medical adherence of patients is a must in the case of osteoporosis, so as to prevent further risk factors. Since the patients with co morbidities were also included, so there were chances for the decreased medication adherence due to drug events. Hence to assess the adherence to treatment plan MMAS questionnaire was beneficial. The patient's adherence to the osteoporotic medication provided to them by their physician is an important aspect of their treatment routine. Without this form of cooperation from the patient's side, the treatment regimen is bound to fail and as a result, will increase the difficulties of the patient. Hence it is recommended that every patient must follow their treatment regimen without fail as it will not only help in refining the rate of their recovery but will also prevent further deterioration of their health status. Moreover, it may aid them in improving their mental and emotional functionality which could have diminished due to their ill health [1, 5].

Adherence to medications is always a problem in elderly patients as they are prone to comorbid diseases, polypharmacy and associates side effects, also due their cognitive behavior therefore leading to reduced therapeutic efficacy, frequent hospital visits, increased health care cost, and long duration of treatment.(medication adherence in elderly [6])

Importance of adhering to the medications like as bisphosphonates can be seen in postmenopausal women as medication non adherence can lead to serious complication like fractures which further detoriates the health of patient [7].

MATERIALS AND METHODS

It was a Prospective Interventional type of study was carried in the The Oxford Medical College and Research Centre located in Attibele, Bengaluru for 6 months among inpatients and outpatients of orthopaedic department from December 2017 to May 2018. All the women of age 35 years and above were included in the study. Sample size was calculated using precession formula. A total of 120 female osteoporotic patients were interviewed with a pre designed set of MMAS-4 questionnaire. The questionnaire was filled prior counselling. The M.M.A.S scale is an important scale which is used to assess the medication usage by the patient and those patients who were found to be low scored are included in counselling mainly. But counselling is done for all the patients. The adherence was known as per the scoring as follows:

TOTAL SCORE:

The scoring was based yes or no answers

YES-0

NO-1

The data obtained will be analysed by using descriptive statistical analysis such as Mean, Standard deviation and Chi-Square.

Ethical approval was obtained from the Institutional ethics committee of The Oxford Medical College, Attibele, Bengaluru. (Reference no: IEC/TOMCHRC /O66117-L8).

RESULTS

Patient distribution based on medication adherence score

Patient distribution based on the score on medication adherence illustrated in table No.1 and figure.1 which indicates that 70 (58.3%) patients are non-adherent to the osteoporosis medication, 42 (35%) are having average score and only 8 (6.7%) patients are said to have medication compliance.

Medication adherence and patient education

Correlation of patient education and medications adherence is given in table No.2 and fig.2 shows that, the patients with primary education have poor compliance than the patients with secondary education and graduates indicating a positive correlation on education of the patient with medication adherence.

Medication adherence in elderly patients

The data shown in table No.3 and Fig.3 says that elderly OP patients with comorbid disease (72%) are non-adherent to medication in greater percentage than those without comorbid disease (35%). Which can be said that polypharmacy due to comorbid disease is a variable for medication non adherence in elderly patients.

Table 1. Patient distribution based on the score on medication adherence

Medication Adherence	Score (N=120)
Poor (0-1)	70 (58%)
Average (2-3)	42 (35%)
Good (4)	8 (7%)

Table 2. Correlation of patient education with medication adherence

Medication Adherence & Education (N=120)	Poor	Average	Good
Primary (n=74)	47 (64%)	26 (35%)	1 (1%)
Secondary (n=39)	22 (57%)	14 (36%)	3 (7%)
Graduate (n=7)	1 (14%)	2 (28%)	4 (58%)

Table 3. Correlation of medication adherence in elderly patients with or without comorbid disease

Medication Adherence in Elderly Patients (n=38)	Poor	Average	Good
With Comorbidities (n=21)	15 (72%)	6 (28%)	0
Without Comorbidities(n=17)	6 (35%)	10 (59%)	1 (6%)

Fig.1. Patient distribution based on the score on medication adherence

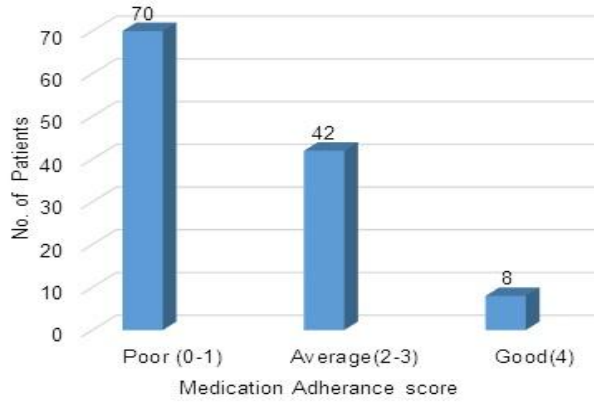


Fig.2. Correlation of patient education with medication adherence

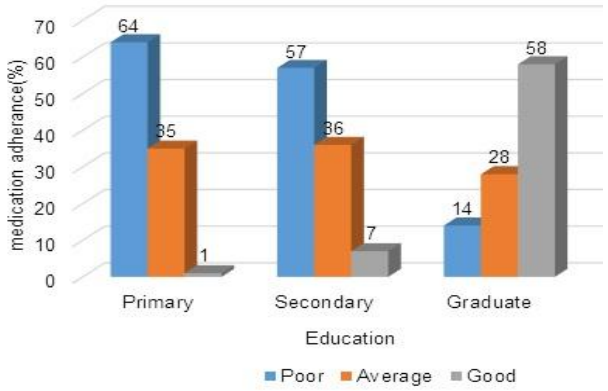
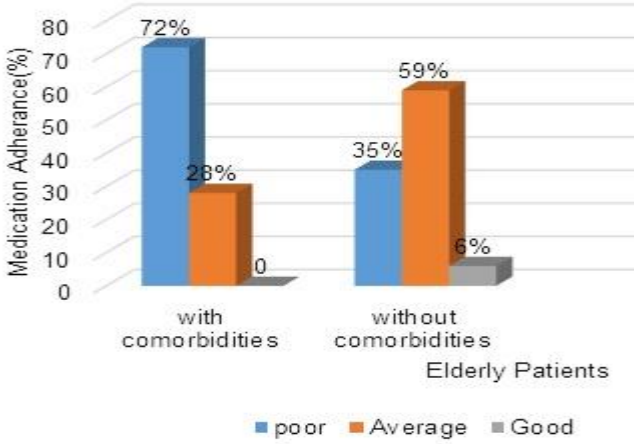


Fig.3. Correlation of medication adherence in elderly patients with or without comorbid disease



DISCUSSION

Alexandra Papaioannou et al., [8] found that compliance to osteoporosis medications was relatively poor. Around 20–30% of patients taking weekly or daily treatments may stop taking their treatment within 6–12 months of commencing therapy. Moreover, 25–50% of patients will not be having the medication properly. Our study also gives a similar result showing 70 (58%) patients are having poor adherence, 42 (35 %) patients having average score and only 8 (7%) are completely adherent to the medications with a good score. From a study on Medication Adherence among Type 2 Diabetes Mellitus by Arulmozhi S et al.,[9] estimated among the total 59 subjects (39.3%) were under primary education level which is consistent with our study where 64% of the patients with primary education are not adherent to their osteoporosis medication which is statistically significant with the results (P= 0.00001).

Also the study by Daniel H. Solomon et al., [10] identified 40002 patients who initiated a medication for Osteoporosis during a period of 6 years. Based on information collected from 1 year before commencing an Osteoporosis medication, most of the patients in the study sample had an average of 2 major comorbid diseases and used 9 different drugs. Patient's age also showed a significant role in compliance, with the lowest compliance noticed in older patients. Being older, more non-osteoporosis medications used and more comorbid conditions are the variables which decreased the likelihood of being adherent. Similarly our study also gives a result that majority of the elderly patients with comorbid conditions have poor medication adherence

(72%) when compared to those without comorbid conditions with average score on medication adherence (59%) with insignificant statistical results (P= 0.075777). This shows that the elderly patients have poor medication adherence due to poly-pharmacy.

CONCLUSION

The patients adherence scores revealed that majority of the cases included were non- adherent. The reasons that we found for non-adherence to medicines were polypharmacy due to other comorbid conditions, old age, forgetfulness and ignorance. A collaborative approach with the involvement of the patient is necessary to improve the patient compliance.

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