Original Research Article

Prevalence of Depression in Post-Menopausal Women in Central India

Reema R Gorte[1], Avinash Tekade[2], Namrata Loya[3]

[1]Assistant Professor, Dept of Physiology, Government Medical College, Chandrapur, Maharashtra, India.
[2]Professor and Head, Dept of Physiology, Government Medical College, Chandrapur, Maharashtra, India.
[3]Assistant Professor, Dept of Physiology, Government Medical College, Chandrapur, Maharashtra, India.

Abstract:

Background: Every woman face the menopause during her stage of growth. Menopause cause various health problems on body. Psychological problems are one of commonest problem in modern societies. Depression is common psychiatric disorder in women.

Objectives: The aim was to determine prevalence of depression in post-menopausal women.

Materials and Methods: Fifty postmenopausal women of age 45 to 60 years and fifty premenopausal women of age 35 to 45 years were selected for the study. Depression assessed by Hamilton depression scale. (HAM-D Score).

Results: In postmenopausal women, depression was significantly higher than premenopausal women (p=0.0218).

Conclusion: The findings of our study suggest that the increase in prevalence of depression is due to hormonal background of menopausal status, age related health problems.

Keywords: Premenopausal, Postmenopausal, Depression.

Introduction

The term menopause is defined as cessation of menstruation for 12 months which results in ovarian senescence and permanent amenorrhoea. It is a progressive endocrinological phase wherein women transit from regular cyclic menses to a final menstrual period followed by amenorrhoea, denoting inactive ovarian function.[1]

According to the Indian Menopause Society the average age of women is 47.5 years which is much less than western counter parts. [2]As the world's population is always on a rise with improved medical care, there will be increasing number of women entering menopause and a majority of them spend about one third of life in the post-menopausal stage.

During menopause, some women experience numerous and severe symptoms, while others experience minor or no symptoms[3]. The nature and prevalence of menopausal symptoms are common in most women. The symptoms experienced by the postmenopausal women depends on the level of estrogen hormone. The symptoms associated with estrogen deficiency include hot flushes, night sweats, insomnia and vaginal dryness. During menopause transition, the level of reproductive estrogen is reduced from 250-100pg/ml to less than10 pg/ml[4]. Therefore, the ability to saturate the receptors and stimulate the targeted tissue cells disappears, leading to estrogenic dysfunction. There are others symptoms and conditions that are not necessarily related to estrogen deficiency may be abnormal bleeding, osteoporosis, arteriosclerosis, depression, irritability, headache, amnesia, dry mouth, eyes, reduced skin elasticity, muscle and joint pain.

In women's life, menopausal transition is also significantly associated with deleterious changes in mental state. Psychological problems and particularly depression is one of problems menopausal women face in the modern societies[5]. Depression is one of the most common psychiatric disorders, which is not limited to specific time, place, or person and includes all groups and classes of society. Depression can be followed by some side effects and problems that leads to psychological and physical problems in the family and finally suicide, which is usually seen in untreated depression. The prevalence of this disorder in women is about two times than its prevalence in men of any age[5]. These complaints are mostly neglected by the females and ignored due to social stigmas and lack of awareness amongst the elderly population regarding the same. It often affects the quality of life and is thus essential to diagnose and treat on time [6].

The tool used in this study to assess the depression is the Hamilton rating scale. It is also called the Hamilton depression rating scale. It is abbreviated as

HAM-D. It is a multiple-item questionnaire used to provide an indication of depression [7].

The concise study not done before in central India. Menopause is an important subject to study as due to increase in life expectancy and improved health care delivery, number of postmenopausal women is significantly increasing. Thus, it is important to study the prevalence of depression in postmenopausal women in central india to improve their quality of life.

Material and Methods

The present study was carried out in Department of Physiology of Government Medical College in central india. Women aged 35 to 60 years attending to the outpatient department of the medical college and hospital and the staff working in the medical college and hospital has been recruited.

With 80% power and 95% confidence interval calculated the sample size of 50 in each group namely Study group –   Postmenopausal women aged 45 to 60 years and Comparison group – Premenopausal women aged 35 to 45 years.

After selection, women from both groups were then given appointment in group of five in the department of physiology during morning hours for measurement of anthropometric parameters and assessment of depression. Informed written consent was taken from each subject before the interview. No pressure was exerted on study participants to participate in a study. Confidentiality was ensured at all stages.

Both groups were subjected for anthropometric measurements like weight, height and body mass index.
Depression was assessed by Hamilton rating scale (HAM-D Score) [6].

Assessment of Depression: Since its development in 1960 by Dr. Max Hamilton of the University of Leeds, England, the scale has been widely used in various studies. Hamilton Depression Scale , which measures the presence and the severity of depression. Depression was assessed in subject by using Hamilton rating scale for depression with using 21 questionnaire and severity will be labeled when score is high. For every question characterizing a disease symptom, there are 4 written statements, which respectively represent the mildest to the most severe form of sick feeling. Although the HAM‑D form lists 21 items, the scoring is based on the first 17. It generally takes 15–20 min to complete the interview and score the results. The following scores are considered to determine the overall level of depression in this study.

Hamilton Depression Scoring

Sum the scores from the first 17 items.
• 0–7 = Normal
• 8–13 = Mild depression
• 14–18 = Moderate depression
• 19–22 = Severe depression
• ≥23 = Very severe depression.

Postmenopausal women who have undergone hysterectomy, diabetic, hypertensive, on hormone replacement therapy and with h/o gynecological and hormonal disorder have been excluded in this study. Ethical approval for this study was obtained from institution.

Statistical Analysis

The data was collected, compiled and analysed using EPI info (version 7.2) The qualitative variables were expressed in terms of percentages. The quantitative variables were both categorized and expressed in terms of percentages or in terms of mean and standard deviations. Difference between two proportions was analysed using chi square or fisher exact test.

Observations and Results

The study was carried out in Department of Physiology Government Medical College in central India on postmenopausal and premenopausal women of age group 35 to 60 years. Fifty cases each in postmenopausal and premenopausal group were selected randomly and study was carried out on prevalence of depression in postmenopausal and premenopausal women.

Results:

Table 1: Distribution of the study subjects based on the age groups.

Age group	Postmenopausal		Premenopausal		P value
	No^r	%	No^r	%	
30 to 40	0	0	30	60.00	<0.001
41 to 50	30	60.00	20	40.00	
51 to 60	20	40.00	0	0	
Total	50	100	50	100	
Mean	50.50		39.42		<0.001
SD	3.84		2.86		

The mean age of the subjects in postmenopausal group is 50.50 ± 3.84 years and among the premenopausal women it was 39.42 ± 2.86 years and this difference was statistically significant.

Table 2: Distribution of the study subjects based on various anthropometric parameter

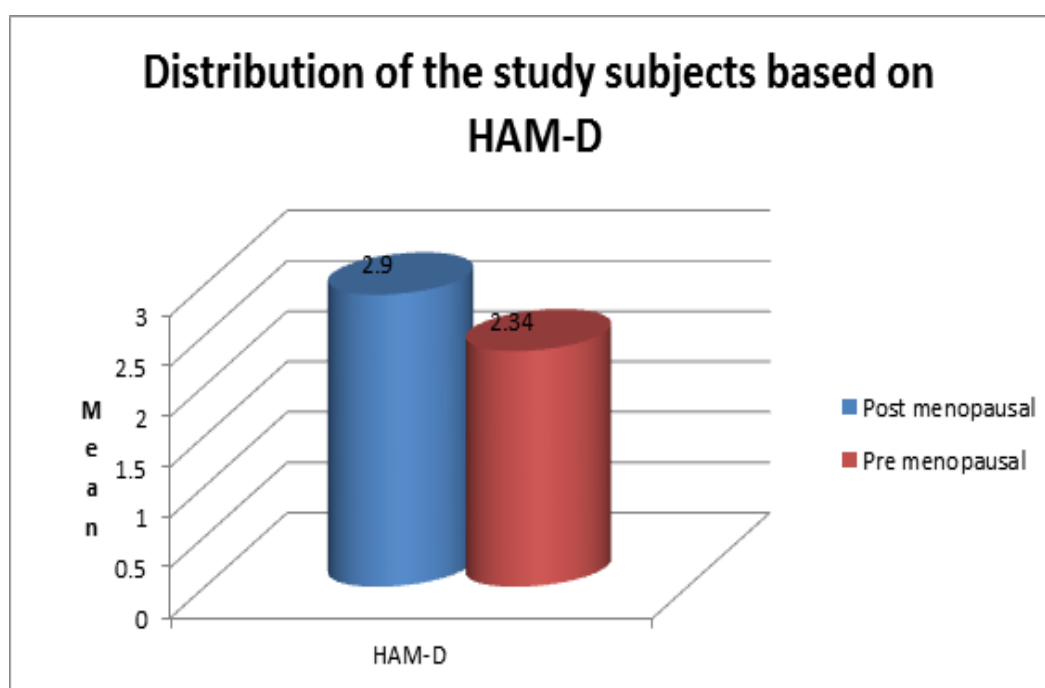| Anthropometric parameters	Postmenopausal		Premenopausal		P value
	Mean	SD	Mean	SD	
Height	151.90	7.63	150.50	14.83	0.5542
Weight	61.78	13.17	55.96	12.81	0.0274
Body mass index	26.63	4.58	24.10	5.37	0.0131

There was no statistical difference in height of postmenopausal and premenopausal women.

Weight and body mass index of postmenopausal women were significantly higher as compared to premenopausal women.

Table 3: Distribution of the study subjects based on HAM-D score

HAM-D (Categories)	Postmenopausal		Premenopausal		P value
	No	%	No[r]	%	
Total	50	100	50	100	
	Mean	SD	Mean	SD	
	2.90	1.83	2.34	1.44	0.0218

HAM-D score was significantly higher in postmenopausal women as compared to premenopausal women.

Discussion

The present cross sectional study was undertaken in 100 women which includes 50 postmenopausal women as a study group & 50 premenopausal women as comparative. The parameters studied were anthropometric parameters like   height, weight, body mass index and depression. There was statistically significantly higher BMI in post-menopausal women as compare to premenopausal women (p value 0.03).

Same finding found in Grazyna Jasienska, (2005), Quadri S, Dhundsi S. (2012) [4] stated that the values of BMI was more in postmenopausal women and depends on duration of menopause.   Zuzana Danková et al. (2014) [8] Higher mean values of BMI in postmenopausal group than in premenopausal women reached again no statistical significance after controlling for age.

The mean values of depression (HAM-D) in postmenopausal women was 2.90+_1.83 while that in premenopausal women (comparison) was 2.34+_1.44. The mean values of depression (HAM-D Score) are depicted in table no 3 and bar diagram. It was observed that the postmenopausal women had significantly higher HAM –D Score (depression) as compare to premenopausal women. Our findings supported by study Afshari P et al (2015)[9] who showed that a significant percentage of women experiencing depression in their menopause. This depression can be associated with certain personal characteristics (e.g. relationship with spouse), socioeconomic status (education, income) and being exposed to cigarette smoke. In a study conducted by Polisseni et al. in Brazil, the prevalence of depression during menopause was 36.8% which is similar to our study.[10] This is consistent with the findings of Ahlawat, et al (2019)[11] study revealed

prevalence of depression in significant number of postmenopausal women. To improve the quality of life of women in postmenopausal period, diagnosis of depression and relevant influencing factors is important. In an another study done by Vijayalaxmi et al depression was one of the common prevalent symptom in women of age group of 40 -55 years in the city of Amritsar. [12]

Another study conducted by G. Jasienska et al (2005) [13] observed that the higher incidence of depressive symptoms in postmenopausal women. There are biological mechanisms linking postmenopausal status with depression via levels of sex steroids and serotonin . Estrogens and progestins can affect serotonin function system, which is thought to play a major rolein the etiology of depression. The higher incidence of depressive   symptoms observed in postmenopausal women in our study may have a hormonal background or may result from other, nonendocrine risk factors, for example age related health problems which might be more common in postmenopausal years [9]. In a study conducted by Singh and Pradhan in New Delhi, 32.1% of postmenopausal women suffered from depression. [14] A study conducted in Beijing city by Li *et al.*, significant postmenopausal women suffered from depression and association was found between depression in postmenopausal women and socioeconomic status. [15] Depression in women can cause disability, impair their interpersonal, and social functions and career and also incur high cost to health care system. Thus, the diagnosis of depression and its relevant individual, social, and economic factors in women and providing training and advice from the experts to the family and society would be helpful [8].

Conclusion

The study was undertaken to determine prevalence of depression in postmenopausal women. In postmenopausal women HAM-D SCORE (depression)was significantly higher than premenopausal women. Estrogens and progestin have the ability to alter the function of the neurotransmitter serotonin, which plays a major role in depression. [16] Diminishing estrogens after the menopause have been linked to depression, reduced libido, and cognitive disturbances in women. Women in the post – menopausal stage have increased predisposition towards developing psychological disorders like depression and hence the assessment of mental health is essential in post-menopausal women, and it should be vital part of assessment of post-menopausal women. Thus, the comprehensive intervention programs can be developed for decreasing depression in postmenopausal women.

Recall bias regarding personal information and estradiol blood test are the limitations of our study.

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