Measurement of Menopausal Symptoms using Greene Climacteric Scale in a Tertiary Care Centre in Uttarakhand, India

Obstetrics and Gynaecology Section

RAJLAXMI MUNDHRA[1], NIHARIKA DHIMAN[2], JAYA CHATURVEDI[3], SANDIPAN CHOWDHURI[4]

ABSTRACT

Introduction: Menopause represents an important phase in a woman. Increase in life expectancy has resulted in prolongation of this phase.

Aim: To identify the age of onset of natural menopause, associated symptoms of menopausal women attending the outpatient department of AIIMS Rishikesh, Uttarakhand, India.

Materials and Methods: A hospital-based cross-sectional study was carried out in the Department of Obstetrics and Gynaecology of AIIMS Rishikesh, Uttarakhand, India. A total of 100 women having natural menopause over a period of five months were interviewed using Greene Climacteric Scale (GCS) questionnaire. The analysis was based on GCS and its various sub scores. Data analysis was carried out by SPSS version 17.0. Chi-square test, unpaired t-test, Pearson coefficient of correlation were used for statistical analysis. A p≤0.05 was considered as significant association.

Results: The mean age at menopause was 47.2±4.62 years. Six percent of women had primary ovarian insufficiency. Urinary complaints (49 cases), backaches and lower abdominal pain (31 cases), hot flushes (24 cases), pruritus vulvae (15 cases) and musculoskeletal pain (15 cases) were most frequently self-reported menopausal symptoms in the present study. The most frequently reported symptoms as per GCS score were muscle and joint pain (87%), loss of libido (80%), insomnia (60%), hot flushes (54%) and feeling tired (30%). The mean number of symptoms reported by a single lady was 5.69±2.97 (ranged from 0-14). Regular physical activity or doing regular yoga was associated with lower total GCS score (9.50±6.1 vs. 11.18±5.6).

Conclusion: Women in this region viewed menopause negatively. As observed in this study, symptoms were common and disturbing and hence cannot be ignored. Attempt should be made to treat menopausal symptoms starting from lifestyle management perspective in the form of yoga/exercise/calcium supplementation.

INTRODUCTION

Menopause represents the end of fertility in a woman's life. It is, in fact, a normal physiological state however, the transition to menopause can significantly change the health and wellbeing of a woman. Menopausal symptoms are mostly well tolerated but can be really disturbing to some, thereby compromising their day to day life.

With increase in life expectancy, a woman spends nearly 1/3rd of her life in this phase [1]. The age at natural menopause worldwide is 45-55 years [2]. In Asia as a whole, the proportion of the elderly is expected to increase from 10.5 22.4% during 2012-2050. While India is not expected to report more than 19% elderly by 2050, the absolute numbers will be very large and a large proportion of this will be formed by elderly females [3].

Literature search has shown that at least 60% of ladies suffer from mild symptoms, 20% from severe symptoms and the rest 20% are asymptomatic [4]. In Indian scenario, women usually seek advice only when the symptoms are severe. At times, even if the symptoms are bothering, they are unable to reach healthcare facilities owing to a combination of socio-cultural, transportation difficulties and economic instability; all these results in, under reporting of data. Moreover, there is lack of awareness about menopause and its effects among Indian women. Studies relating to perception of menopause and its symptoms are less, especially in this region.

This study was planned to identify the age of onset of natural menopause, associated symptoms and other health problems of menopausal women attending the outpatient department of AIIMS Rishikesh. The analysis was based on GCS and its various subscores. This scale provides a brief measure of menopausal symptoms. The GCS distinguishes 21 different symptoms clustered into four subclasses-11 psychological symptoms (subdivided into six anxiety and five depression symptoms), seven somatic/physical symptoms, two vasomotor symptoms and one sexual symptom. Each symptom ranges from 0 (not at all) to 3 (extremely) [5].

MATERIALS AND METHODS

This was a hospital-based, cross-sectional study. All women presenting with menopausal symptoms in gynaecology outpatient department were enrolled in the study, over a period of five months from January 2015 to May 2015. Women with unnatural menopause such as those having surgical menopause or radiotherapy induced were excluded from this study. The study was approved by Institutional Ethical Committee. A total of 117 women fulfilled the inclusion criteria and were interviewed. Seventeen were rejected during data analysis owing to incomplete completion of forms. Data of 100 women was analysed. Women were interviewed using the 21 points GCS Questionnaire, after taking informed consent from each participant.

Data regarding the demographic profile such as age, educational status, parity, marital status, dietary patterns, smoking and alcohol addictions, healthy lifestyle followers such as those doing regular exercise/yoga and taking calcium supplementation were collected

from each patient. Calcium supplementation as 500 mg oral tablets was recorded. Duration of intake whether infrequently or as daily once or twice dosing was recorded. Exercise in the form of brisk walking for thirty minutes at least three times a week was accepted. Women in this region practice yoga and simple breathing exercises daily at least for 10-15 minutes in morning and this was also included. Data regarding self reported menopausal symptoms and associated comorbid conditions (diabetes, hypertension, thyroid diseases, osteoarthritis, rheumatoid arthritis) were also noted. All patients had routine height, weight and blood pressure measurements.

STATISTICAL ANALYSIS

Data analysis was carried out by SPSS version 17.0. Unpaired t-test was used for statistical analysis. A $p \leq 0.05$ was considered as significant association.

RESULTS

Demographic Profile of Study Population

The study population comprised of 100 women with natural menopause. The mean age group of the study population was 56.33 years (range: 34-90 years). Dietary patterns revealed that 64% of the women were vegetarians. About 8% of the women were addicted to bidi smoking (2-3 bidis/day) and 3% were alcoholics. Only 20% were known to take calcium supplementation (13 cases were taking it regularly since two years in twice daily oral dosing and the rest seven women were taking it infrequently) and were engaged in regular exercises (yoga/morning walk) [Table/Fig-1].

The mean age at menopause was 47.2±4.62 years. Six percent

Demographic Profile of Menopausal Women	
Characteristics	Frequency (%)
Age distribution	
≤40 years	2
41-45 years	8
46-50 years	22
51-60 years	43
61-70 years	18
71-90 years	7
Mean age group (years)	56.33
Marital status	
Married	83
Unmarried	0
Divorced	2
Widow	15
Educational status	
Illiterate	60
Class 1-5	8
Class 6-10	15
Class 11-12	6
Graduate	8
Postgraduate	3
Occupation	
Employed	13
Housewife	87
Dietary habits	
Vegetarian	64
Non vegetarian	36
Smoking	
Yes	8
No	92
Alcoholism	
Yes	3
No	97
Calcium supplementation	
Yes	20
No	80
Exercise	
Yes	20
No	80
Parity	
Nulliparous	6
Primiparous	9
Para 2-4	57
>4	28

[Table/Fig-1]: Demographic profile of menopausal women.

of women had primary ovarian insufficiency. The present study showed that in 23% women, symptoms started within two years of menopause whereas 55% developed symptoms after five years of menopause. Symptoms appearing after five years of menopause were mostly musculoskeletal pain, which were probably attributed to ageing. Sixty two percent of the women felt that menopause was harmful whereas 38% believed that it was not harmful. Out of all the study subjects, only 14% were aware of screening methods for genital malignancy (they knew about PAP smear) and importance of breast self examination. However there was a significant difference/lag in awareness and practice as none of the women underwent PAP screening or mammography [Table/Fig-2].

Age at menopause in years	Frequency
<40	6
40-45	27
46-50	45
51-55	19
>=56	3
Mean age of menopause	47.2±4.62 years
Duration of development of symptoms	
<24 months of menopause	23
2-5 years	22
5-10 years	20
>10 years	35
Awareness about menopause	
Yes	92
No	8
Is menopause harmful	
Yes	62
No	38
Awareness about PAP smear	
Yes	14
No	86

[Table/Fig-2]: Age of menopause.

Urinary complaints (49%), backaches and lower abdominal pain (31%), hot flushes (24%), pruritus vulvae (15%) and musculoskeletal pain (21%) were most frequently self-reported menopausal symptoms in the present study [Table/Fig-3].

The most frequently reported symptoms as per GCS score were muscle and joint pain (87%), loss of libido (80%), insomnia (60%), hot flushes (54%) and feeling tired (30%). The mean number of symptoms reported by a single lady was 5.69±2.97 (ranged

Self reported symptoms	Frequency
Urinary problems	49
Lower abdominal pain, backache	31
Hot flushes	24
Uterovaginal prolapse	15
Vaginal dryness and pruritus vulvae	21
Muscle and Joint pain	21
Gastrointestinal problems	22
Postmenopausal bleeding	12

[Table/Fig-3]: Self-reported symptoms.

from 0-14). As seen in [Table/Fig-4], the mean total GCS score was 10.9±5.75 (ranged from 0-27). The mean psychological sub score was 4.26±3.89 (range 0-15), mean somatic sub score was 3.51±2.27 (range 0-10), mean vasomotor sub score was 1.27±1.42 (range 0-4) and mean sexual sub score was 1.88±1.16 (Range 0-3) [Table/Fig-4].

Score	Minimum	Maximum	Mean	Std. Deviation
Total score	0	27	10.90	5.752
Total symptoms	0	14	5.69	2.974
Anxiety score	0	12	2.61	2.643
Depression score	0	9	1.64	2.038
Somatic score	0	10	3.51	2.272
Vasomotor score	0	6	1.27	1.420
Sexual score	0	3	1.88	1.166

[Table/Fig-4]: Mean GCS score and sub score.

Regular physical activity or doing regular yoga was associated with lower total GCS score (9.50±6.1 vs. 11.18±5.6), though the difference was not statistically significant, although a significant difference was noted in terms of lower depression score in exercise and yoga group (0.9±1.48 vs. 1.81±2.13, p=0.032). Age, marital status, smoking educational status and occupational status were not associated with lower total GCS score. The study subjects with parity>4 had significantly lower vasomotor scores (0.64±1.026) as compared to those with parity 2-4 (1.5±1.5, p=0.047) [Table/Fig-5,6].

Score	Exercise	N	Mean	Std. Deviation	Std. Error Mean
Total score	yoga/exercise yes	20	9.50	6.160	1.377
	yoga/exercise no	80	11.18	5.629	0.633
Depression score	yoga/exercise yes	20	0.90	1.483	0.332
	yoga/exercise no	80	1.81	2.131	0.240

[Table/Fig-5]: Exercise and depression score.

Score		N	Mean	Std. Deviation	Std. Error
Vasomotor score	parity 0	6	1.17	1.329	0.543
	parity 1	9	1.78	1.302	0.434
	parity 2-4	57	1.51	1.537	0.204
	parity >4	28	0.64	1.026	0.194
	Total	100	1.27	1.420	0.142

[Table/Fig-6]: Parity and vasomotor score.

In terms of associated comorbid conditions, hypertension was noted in 23% cases, diabetes in 9%, osteoarthritis knee in 6% and thyroid diseases in 4%.

DISCUSSION

Mean age at menopause in the present study was 47.2±4.62 years, similar to Bairy L et al., (48.70 years) [6]. However, it is higher in comparison to the mean age at menopause as reported by Singh A and Arora AK (44 years) and Mahajan N et al., (44.54 years) (Indian studies) [7,8]. The median age at menopause among women

from industrialised nations ranges from 50 to 52 years with onset of perimenopause at 47.5 years [9-13]. Diversity in attainment of menopause could be attributed to regional variation with association of various genetic, lifestyle changes, environmental, cultural and nutritional variation. In the present study, approximately 6% of women attained menopause prior to 40 years as compared to 1.6% in the study done by Singh A and Pradhan SK [14].

Mean age at menopause in smokers in present study was 45.87±5.98 years as compared to 47.34±4.55 years in non smokers. Earlier studies have proved that women who smoke stop menstruating one to two years earlier than comparable nonsmokers [11,15] attributed to oocyte depletion.

This study showed that majority (62%) of the women believed menopause to be harmful unlike Mahajan N et al., wherein 56% women said that they were not affected by menopause [8]. Though menopause is a reality, the perception varies among women. In the Eastern societies, it is seen as a natural process and women hold a positive attitude towards it [16,17].

An 86% of the studied sample was unaware of PAP smear, probably attributed to lower educational status.

In present study, the type of symptoms noted were mainly muscle and joint pain (87%), loss of libido (80%), insomnia (60%), hot flushes (54%) and feeling tired (30%) were the most frequently reported symptom unlike fatigue (62%), hot flashes (56%), cold sweats (52%), and backaches (51%) in the study done by Mahajan N et al., [8].

In the present study, 87% had muscle and joint pain whereas the prevalence was only 59% in study done by Singh A et al., [14].

In a study by Haimov-Kochman R et al., in women aged 45-55 years, the mean total GCS score was 19.4±11.8 (range 0-63), mean somatic subscore was 5.3±4.5 (range 0-23), mean psychological sub score was 9.5±6.4 (range 0-28), mean sexual subscore was 2.2±1.8 (range 0-3), mean vasomotor sub score was 2.2±2 (0-6) [18]. Whereas in present study the mean GCS score and mean sub score in all the clusters was lower. This could probably be attributed to environmental and non sedentary lifestyle of the study sample. Women in our sample were mostly from hilly areas, but this needs further evaluation by a large scale study to establish the possible relationship.

This study revealed that certain demographic and lifestyle parameters affect menopausal symptoms. The present study mostly comprised of lower socio-economic and illiterate females. Parity more than four and doing yoga/regular exercise was significantly correlated with less severe menopausal symptoms. A significant difference was noted in terms of lower depression score in exercise and yoga group (0.9±1.48 vs. 1.81±2.13, p=0.032). Regular physical activity was associated with lower total GCS score and lower psychological subscore in the study by Haimov-Kochman R et al., [18]. This effect may be indirect as physical exercises increases physical self worth and positive attitude, thus decreasing the bother from climacteric symptoms. Haimov-Kochman R et al., also showed that high order maternity was significantly associated lower psychologically sub score whereas in present study parity >4 had significantly lower vasomotor scores (0.64±1.026) as compared to those with parity 2-4 (1.5±1.5, p=0.047).

Sierra B et al., reported that age, higher parity and lower educational level were associated to higher scorings for total and different cluster of GCS [19]. Age, marital status, smoking educational status and occupational status were not associated with lower total GCS score in present study.

LIMITATION

A causal relationship could not be established because of its cross-sectional design. Moreover, the change in the individual climacteric score over the time could not be assessed. Strengths of this study

include-the study sample, though small represents the population seeking medical consultation during menopause. It was one of a few studies on menopause in this region. This study also noted self-reported menopausal symptoms and then GCS was filled, thereby avoiding recall bias.

CONCLUSION

The mean age at menopause was 47.2±4.62 years and 6% women had primary ovarian insufficiency. Yoga/regular exercise was significantly correlated with less severe menopausal symptoms Muscle and joint pain (87%), loss of libido (80%), insomnia (60%), hot flushes (54%) and feeling tired (30%) were the most frequently reported symptoms. Women in this region viewed menopause negatively. In order to tide over the menopausal period, efforts should be made by the health care provider to increase awareness about menopausal symptoms. Attempt should be made to treat menopausal symptoms starting from lifestyle management perspective in the form of yoga/exercise/calcium supplementation. More studies with large sample size needs to be done in this correlation.

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PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of Obstetrics and Gynaecology, AIIMS, Rishikesh, Uttarakhand, India.
2. Assistant Professor, Department of Obstetrics and Gynaecology, MAMC, Delhi, India.
3. Professor and Head, Department of Obstetrics and Gynaecology, AIIMS, Rishikesh, Uttarakhand, India.
4. Ex Senior Resident, Department of Obstetrics and Gynaecology, AIIMS, Rishikesh, Uttarakhand, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Rajlaxmi Mundhra,
Assistant Professor, Department of Obstetrics and Gynaecology, AIIMS, Rishikesh-249203, Uttarakhand, India.
E-mail: rmundhra54@yahoo.com