

Severity of Menopausal Symptoms in Women Posthysterectomy at a Tertiary Care Hospital, Tamil Nadu, India: A Cross-sectional Study

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ABSTRACT

Introduction: Menopause, a natural occurrence in women's lives, is characterised by a drop in ovarian hormones, oestrogen, and progesterone levels. Sudden hypoestrogenic state, that is caused by hysterectomy leads to the development of menopausal symptoms.

Aim: To assess the occurrence and severity of menopausal symptoms in women who underwent hysterectomy for benign gynaecologic conditions.

Materials and Methods: A hospital-based cross-sectional study was conducted in the Department of Obstetrics and Gynaecology at Chettinad Hospital and Research Institute, Kelambakkam, Tamil Nadu, India, over a period of three months. The study included 100 women in the age group of 35-55 years who had undergone hysterectomy for benign conditions were invited to participate in the study. Those who agreed to the study and completed the questionnaire after six weeks and three months postoperatively were included in this study. Menopausal symptoms and severity were assessed using modified Menopause Rating Scale (MRS) scale.

Posthysterectomy menopausal symptoms at six weeks and three months were compared using Chi-square test.

Results: The mean age of the study participants was 45.85±6.24 years. Most of them, 52 (52%) had heavy menstrual bleeding, 28 (28%) of the study participants had no associated comorbidities. A total of 54 (54%) of the women of this study was diagnosed as Abnormal Uterine Bleeding-Leiomyomas (AUB-L). Majority 76 (76%) of them had undergone total abdominal hysterectomy with or without bilateral salpingoopherectomy. Mean duration of hospital stay 7.48±2.02 days. Postoperative diet of these women included calcium containing foods 57 (57%), iron containing foods 68 (68%). There was a statistically significant difference in majority of menopausal symptoms like hot flushes, palpitations, night sweats, reduced duration of sleep, anxiety, lack of interest in sex, forgetfulness and joint and muscle pains between six weeks and three months postoperatively.

Conclusion: The present study concluded that the symptoms of hot flushes, difficulty in urinating, anxiety, joint and muscle pain was significantly higher at six weeks when compared to three months.

Keywords: Hot flushes, Hypoestrogenic state, Hysterectomy, Surgical menopause

INTRODUCTION

Menopause, a natural occurrence in women's lives, is characterised by a drop in ovarian hormones, oestrogen, and progesterone levels [1-3]. Hot flushes, irregular menstrual cycles, psychological changes, urogenital disturbances, loss of libido, muscle and joint pains are some of the menopausal symptoms experienced by women [2-4]. In the period leading upto menopause, these symptoms are felt by more than 80% of women over the age of 45. Common symptoms include psychological issues, somatic symptoms, urogenital symptoms, and sexual dysfunction [5-9]. Hysterectomy is the surgical removal of the uterus with or without ovaries leading to surgical menopause. The majority of hysterectomies are done for benign gynaecologic conditions [10]. The most common indications for hysterectomy are leiomyomas, Abnormal Uterine Bleeding (AUB), and persistent pelvic pain [11]. Hysterectomy for various benign conditions leads to many positive outcomes such as cessation of AUB, relief from monthly menstrual symptoms, endometriosis-related pelvic discomfort, fibroid-related pressure symptoms, and urinary disturbances [12]. Sadness and anxiety are also some symptoms that get better. Some women may develop new issues like weight gain, changes in self-image, social and home disruptions, prolonged healing duration, and wound discomfort that can last for upto a year in many women after surgery [13]. Women frequently experience more severe menopausal symptoms as a result of the sudden menopause caused by hysterectomy than they would if menopause occurred naturally [14].

The MRS is a widely used tool in evaluating the health-related quality of life of women going through the menopausal transition [15]. Hysterectomy is the most commonly performed surgery in women for various gynaecological conditions [16]. There are not many studies in literature which has assessed the time of occurrence and severity of menopausal symptoms in women who experienced surgical menopause as a result of hysterectomy. Studies such as Zhang JP et al., found that the majority of menopausal symptoms were mild to moderate in severity, with fewer being severe [17]. Benshushan A et al., which showed that surgical menopause when compared to natural menopause, was associated with more severe psychological symptoms like anxiety, lack of sleep, urogenital symptoms like urinary disturbances and somatic symptoms like hot flushes [18]. But these studies has not assessed the time of occurrence and severity of menopausal symptoms in posthysterectomy women. Hence, the present study was undertaken on 100 women who had undergone hysterectomy and developed surgical menopause. This study was conducted to assess the various menopausal symptoms in the women at two different time points of six weeks and three months posthysterectomy, to see the type of symptoms that are predominant.

MATERIALS AND METHODS

This was a hospital-based cross-sectional study conducted in the Department of Obstetrics and Gynaecology at Chettinad Hospital and Research Institute, Kelambakkam, Tamil Nadu, India. The study

was conducted over a period of three months from April to July 2022. This study included women in the age group of 35-55 years who had undergone hysterectomy for benign conditions and were invited to participate in the study. A convenient sample of 100 women who agreed to the study and completed the questionnaire administered at six weeks and three months posthysterectomy were included in this study. Ethical principles such as patient respect, beneficence, and justice were strictly followed. Before beginning the study, an Institutional Human ethical committee approval was obtained (Ethical Committee approval No.: IHEC-I/0972/22). All study participants provided written informed consent. The study participants' confidentiality was maintained throughout the study.

Inclusion criteria: Patients who got operated at Chettinad Hospital and Research Institute for benign conditions such as fibroids, AUB, endometriosis, prolapse during the study period were included in this study.

Exclusion criteria: Patients who were on antipsychotic or antidepressant medications and patients who had undergone hysterectomy for malignant conditions were excluded from this study.

Informed consent was taken before collecting the data. The data collection was done by a structured questionnaire which included patient's name, age, symptoms, co-morbidities, diagnosis, procedure done, postoperative diet and exercise. Menopausal symptoms like hot flushes, palpitations, night sweats, reduced duration of sleep, anxiety, feeling depressed, dryness of vagina, lack of interest in sex, burning micturition, recurrent Urinary Tract Infection (UTI), difficulty in urinating, forgetfulness and joint and muscle pains was ascertained at six weeks and three months posthysterectomy. For assessment of the menopausal symptoms, modified MRS, was used [19]. MRS is an 11-item questionnaire comprising three independent dimensions: Psychological, somatic, and urogenital subscale. The urogenital subscale was modified by authors, adding two more additional urinary symptoms. Recurrent urinary tract infection and difficulty in urinating were the two symptoms added. The scale was prevalidated using cronbach's alpha test in the score, 0.76- which was acceptable.

Each of the 13 symptoms in modified MRS was classified into four categories based on the number of episodes per month.

1. Frequently-Symptoms occur 4-5 episodes per month
2. Sometimes-Symptoms occur 2-3 episodes per month
3. Occasionally-Symptoms occur 1-2 episodes per month
4. Rarely-Symptoms occur 1-2 episodes in 2 months.

STATISTICAL ANALYSIS

The data has been entered and analysed with the Epi info version 7.1. Before analysing the data each variable was acquired to check for missing values, blank values and typing errors. The corresponding case numbers were used to trace the questionnaires and the information was rechecked and entered. Quantitative variables like age were expressed as mean and Standard Deviation (SD). Description of categorical variables like age category symptoms, co-morbidities, diagnosis, procedure done, postoperative diet, postoperative exercise, postoperative symptoms of menopause like hot flushes, palpitations, night sweats, reduced duration of sleep, anxiety, feeling depressed, dryness of vagina, lack of interest in sex, burning micturition, recurrent UTI, difficulty in urinating, forgetfulness and joint and muscle pain were expressed as frequency and proportion. Postoperative menopause symptoms at six weeks and three months were compared using Chi-square test.

RESULTS

The mean age of the study participants is 45.85±6.24. Out of 100 participants, 30 (30%) were between the ages of 51-55 years. Among 100 participants, majority of them had heavy menstrual bleeding as the presenting symptoms which was 52 (52%). Regarding

co-morbidities, about 28 (28%) participants did not have any co-morbidities, 27 (27%) had Type 2 Diabetes mellitus [Table/Fig-1].

Basic characteristics	Number	Percentage
Age category (years)		
35-40	25	25
41-45	20	20
46-50	25	25
51-55	30	30
Mean Age±SD	45.85±6.24	
Symptoms		
Heavy menstrual bleeding	52	52
Mass descending per vaginum	7	7
Abdominal pain during menstrual cycle	20	20
Abdominal discomfort	8	8
Abdominal discomfort with umbilical hernia	1	1
Mass per abdomen	9	9
Intermenstrual bleeding per vaginum	3	3
Co-morbidities		
No co-morbidities	28	28.0
Type 2 diabetes mellitus	27	27.0
Hypertension and type 2 diabetes mellitus	16	16.0
Hypertension	15	15.0
Hypothyroid	12	12.0
Bronchial asthma	1	1.0
Seizure disorder	1	1.0

[Table/Fig-1]: Basic characteristics of the study population.

[Table/Fig-2] describes the indications for hysterectomy and type of procedures performed. The most common indication was leiomyoma 54 (54%), 18 (18%) had AUB-adenomyosis. The highest number of procedures performed were total abdominal hysterectomy with bilateral salphingoophorectomy in 46 (46%) women. Mean duration of hospital stay was 7.48±2.02 days [Table/Fig-2].

Variables	Number	Percentage
Diagnosis		
AUB-Leiomyoma	54	54
AUB-Adenomyosis	18	18
AUB-Ovulatory dysfunction	17	17
3 degree UV prolapse	7	7
Cervical fibroid	3	3
AUB- Polyp	1	1
Procedure done		
Total abdominal hysterectomy with bilateral salphingoophorectomy	46	46
Total abdominal hysterectomy	30	30
Laparoscopic assisted vaginal hysterectomy	16	16
Vaginal hysterectomy with pelvic floor	7	7
Total abdominal hysterectomy with bilateral salphingoophorectomy with hernioplasty	1	1
Mean duration of hospital stay	7.48±2.02	

[Table/Fig-2]: Diagnosis, type of surgery done and duration of hospital stay among study participants.

The study found that women in the postoperative period had taken diet consisting of calcium containing food 57 (57%), phytoestrogens containing food 38 (38%) and Iron containing food taken by 68 (68%) women. Around 54 (54%) of women did regular walking for 30 minutes per day and 8 (8%) of participants practiced yoga [Table/Fig-3].

Variables	Number	Percentage
Postoperative diet		
Eating calcium containing foods	57	57.0
Eating foods containing phytoestrogens	38	38.0
Eating iron containing foods	68	68.0
Postoperative exercise		
Walking 30 minutes per day	54	54
Yoga	8	8

[Table/Fig-3]: Postoperative diet and postoperative exercise among study participants.

[Table/Fig-4] describes the menopausal symptoms women experienced at six weeks and three months posthysterectomy. Nearly 48 patients experienced hot flushes occasionally at six weeks and 54 patients experienced hot flushes occasionally at three months posthysterectomy. The symptoms of hot flushes occurring 2-3 episodes per month was significantly higher at six weeks when compared to three months (p -value<0.05). At six weeks posthysterectomy, palpitations occurred rarely in 53 patients and 81 patients had palpitations rarely at three months posthysterectomy. The postoperative symptoms of palpitation had significantly decreased in three months when compared to six weeks (p -value<0.05). Postoperative hysterectomy symptoms like feeling depressed and dryness of vagina was seen equally at six weeks and three months. Other symptoms like lack of interest in sex, burning micturition, recurrent UTI, difficulty in urinating,

Variables	Six weeks posthysterectomy symptoms	Three months posthysterectomy symptoms	p-value
Somatic symptoms			
(1) Hot flushes			
Frequently	10	0	0.001
Sometimes	19	14	
Occasionally	48	54	
Rarely	23	32	
(2) Palpitations			
Frequently	0	0	0.005
Sometimes	10	1	
Occasionally	37	18	
Rarely	53	81	
(3) Night sweats			
Frequently	0	0	0.001
Sometimes	1	1	
Occasionally	36	14	
Rarely	63	85	
(4) Reduced duration of sleep			
Frequently	7	0	0.001
Sometimes	26	5	
Occasionally	46	21	
Rarely	21	74	
(5) Joint and muscle pain			
Frequently	0	24	0.001
Sometimes	2	40	
Occasionally	19	24	
Rarely	79	12	
Psychological symptoms			
(6) Anxiety			
Frequently	0	0	0.001
Sometimes	16	2	
Occasionally	54	14	
Rarely	30	84	

(7) Feeling depressed			
Frequently	0	0	0.728
Sometimes	9	7	
Occasionally	51	48	
Rarely	40	45	
(8) Forgetfulness			
Frequency	0	6	0.001
Sometimes	5	36	
Occasionally	25	44	
Rarely	70	14	
Urogenital symptoms			
(9) Dryness of vagina			
Frequently	0	0	0.156
Sometimes	3	7	
Occasionally	32	40	
Rarely	65	53	
(10) Lack of interest in sex			
Frequently	0	0	0.001
Sometimes	0	9	
Occasionally	21	31	
Rarely	79	60	
(11) Burning micturition			
Frequently	0	2	0.001
Sometimes	2	10	
Occasionally	28	61	
Rarely	70	27	
(12) Recurrent UTI			
Frequently	0	0	0.004
Sometimes	0	4	
Occasionally	17	37	
Rarely	83	59	
(13) Difficulty in urinating			
Frequently	0	0	0.001
Sometimes	1	22	
Occasionally	19	48	
Rarely	80	30	
Total	100	100	

[Table/Fig-4]: Comparison between six weeks and three months posthysterectomy symptoms.

forgetfulness, joint and muscle pain was significantly higher in three months after posthysterectomy when compared to six weeks of posthysterectomy [Table/Fig-4].

DISCUSSION

In the present study, mean age of the study participants was 45.85 ± 6.24 years which was much lower when compared with the findings of the study by Mahajan N et al., where the mean age was 54.4 ± 6 years [20]. Most of them (52%) had heavy menstrual bleeding, whereas 20% had abdominal pain during menstrual cycle and 9% of them had mass per abdomen as symptoms. Zhang JP et al., found that the majority of menopausal symptoms were mild to moderate in severity, with fewer being severe [17].

Fifty four (54%) of the women of this study were diagnosed as AUB-L and 18% as AUB-Adenomyosis (AUB-2A). Majority (46%) of them had undergone total abdominal hysterectomy with bilateral salpingo-ophorectomy. Mean duration of hospital stay was 7.48 ± 2.02 days. These findings are consistent with the findings of Wright JD et al., [21].

In present study, 57% of the women had followed a postoperative diet of calcium containing foods and 68% of them had a practice of

eating iron containing foods. A 54% of them were found to follow postoperative exercise of walking for 30 minutes daily and 8% practised yoga for 30 minutes to one hour. Diet rich in calcium and iron helps to maintain the bone mineral density for these women [22]. It also reduces the incidence of muscle and joint pain that women may experience after hysterectomy. Iron rich diet further helps in maintaining optimal level of haemoglobin, which prevents them from becoming anaemic thus alleviating symptoms like palpitations and insomnia [22].

On comparing the symptoms of study participants between six weeks and three months posthysterectomy, present study showed a highly statistically significant difference in hot flushes between the two groups (48% and 54%, $p=0.001$). There was a significant change between the postoperative symptoms of palpitations ($p=0.005$) also. There was also very high significant change in postoperative symptoms of night sweats, reduced duration of sleep, anxiety, lack of interest in sex, burning micturition, difficulty in urinating, forgetfulness and joint and muscle pain ($p=0.001$). It is worth mentioning that the frequencies of disturbed sleep, night sweats, palpitations, hot flushes, depression, recurrent UTI, difficulty in urinating were less frequent in both the groups. These results are found to be in concordance with the study of Benschushan A et al., which showed that surgical menopause when compared to natural menopause, was associated with more severe psychological symptoms like anxiety, lack of sleep, urogenital symptoms like urinary disturbances and somatic symptoms like hot flushes (p -value <0.001) [18].

In a study by Pal A et al., the prevalence of physical and mental exhaustion was found to be much higher (86%) [23]. The urogenital problems like sexual problems (20%) and dryness of vagina were found to be less prevalent and if present then the symptoms were mild. In present study, urogenital symptoms like dryness of vagina, lack of interest in sex, burning micturition was mostly seen in three months posthysterectomy women. A study done in Turkey by Yanikkerem E et al., claimed that women mostly complained of vasomotor symptoms especially hot flushes (79.6%), in present study hot flushes, palpitations, night sweats were predominantly seen in six weeks, when compared to three months post hysterectomy [24].

Limitation(s)

This study assessed a small sample size of 100 women only. Further research is needed on larger number of subjects to assess the severity of various menopausal symptoms that women experience posthysterectomy.

CONCLUSION(S)

This study concluded that women begin to experience menopausal symptoms as early as six weeks postoperatively itself. The predominant symptoms like hot flushes, night sweats, anxiety, sleep disturbances are experienced by the women at six weeks posthysterectomy and dryness of vagina, forgetfulness, burning micturition, joint and muscle pains at three months posthysterectomy.

This research highlights the need for further studies on a larger number of women undergoing hysterectomy to assess their menopausal symptoms. This research will help the healthcare professionals to provide counselling and to manage the menopausal symptoms appropriately.

REFERENCES

- [1] Berek JS, Hacker NF, editors. Berek and Hacker's Gynecologic Oncology. Lippincott Williams & Wilkins; 2010.
- [2] Fritz MA, Speroff L, editors. Clinical Gynecologic Endocrinology and Infertility. Lippincott Williams & Wilkins; 2005.
- [3] King TL, Brucker MC, Kriebs JM, Fahey JO. Varney's Midwifery. Jones & Bartlett Publishers; 2013 Oct 21.
- [4] Fallahzade H, Dehghani Tafti A, Dehghani Tafti M, Hosseni F, Hosseni H. Factors affecting quality of life after menopause in Women, Yazd 2008. Sadoughi Univ Med Sci. 2011;552-58.
- [5] Waidyasekera H, Wijewardena K, Lindmark G, Naessen T. Menopausal symptoms and quality of life during the menopausal transition in Sri Lankan women. Menopause. 2009;16(1):164-70.
- [6] Poomalar GK, Arounassalame B. The quality of life during and after menopause among rural women. J Clin Diag Res: JCDR. 2013;7(1):135.
- [7] Eden KJ, Wylie KR. Quality of sexual life and menopause. Women's Health. 2009;5(4):385-96.
- [8] Satoh T, Ohashi K. Quality-of-life assessment in community-dwelling, middle-aged, healthy women in Japan. Climacteric. 2005;8(2):146-53.
- [9] Asadi M, Jouyandeh Z, Nayebezhadeh F. Prevalence of menopause symptoms among Iranian women. J Family Reprod Health. 2012;6(1):1-3.
- [10] Wu JM, Wechter ME, Geller EJ, Nguyen TV, Visco AG. Hysterectomy rates in the United States, 2003. Obstetrics & Gynecology. 2007;110(5):1091-95.
- [11] Carlson KJ, Miller BA, Fowler Jr FJ. The Maine Women's Health Study: I. Outcomes of hysterectomy. Obstet Gynecol. 1994;83(4):556-65.
- [12] Nathorst-Böös J, Fuchs T, von Schoultz B. Consumer's attitude to hysterectomy: the experience of 678 women. Acta Obstetrica Et Gynecologica Scandinavica. 1992;71(3):230-34.
- [13] Kjerulff KH, Langenberg PW, Rhodes JC, Harvey LA, Guzinski GM, Stolley PD. Effectiveness of hysterectomy. Obstet Gynecol. 2000;95(3):319-26.
- [14] Bhattacharya SM, Jha A. A comparison of health-related quality of life (HRQL) after natural and surgical menopause. Maturitas. 2010;66(4):431-34.
- [15] Heinemann LA, Potthoff P, Schneider HP. International versions of the Menopause Rating Scale (MRS). Health Qual Life Outcomes. 2003;1(1):1-28.
- [16] Burke WM, Orr J, Leitao M, Salom E, Gehrig P, Olawaye AB, et al. Endometrial cancer: A review and current management strategies: Part I. Gynecol Oncol. 2014;134:385-92.
- [17] Zhang JP, Wang YQ, Yan MQ, Li ZA, Du XP, Wu XQ. Menopausal symptoms and sleep quality during menopausal transition and postmenopause. Chin Med J (Engl). 2016;129(07):771-77.
- [18] Benschushan A, Rojansky N, Chaviv M, Arbel-Alon S, Benmeir A, Imbar T, et al. Climacteric symptoms in women undergoing risk-reducing bilateral salpingo-oophorectomy. Climacteric. 2009;12(5):404-09.
- [19] Khatoun F, Sinha P, Shahid S, Gupta U. Assessment of menopausal symptoms using modified Menopause Rating Scale (MRS) in women of Northern India. Int J Reprod Contracept Obstet Gynecol. 2018;7(3):947-51.
- [20] Mahajan N, Kumar D, Fareed P. Comparison of menopausal symptoms and quality of life after natural and surgical menopause. Int J of Scientific Study. 2015;2(11):74-77.
- [21] Wright JD, Herzog TJ, Tsui J, Ananth CV, Lewin SN, Lu YS, et al. Nationwide trends in the performance of inpatient hysterectomy in the United States. Obstet Gynecol. 2013;122(2 0 1):233.
- [22] Harris MM, Houtkooper LB, Stanford VA, Parkhill C, Weber JL, Flint-Wagner H, et al. Dietary iron is associated with bone mineral density in healthy postmenopausal women. J Nutr. 2003;133(11):3598-602.
- [23] Pal A, Hande D, Khatri S. Assessment of menopausal symptoms in perimenopause and post menopause women above 40 years in rural area Maharashtra (India). Int J Healthcare Biomed Res. 2013;1(3):16674.
- [24] Yanikkerem E, Koltan SO, Tamay AG, Dikayak S. Relationship between women's attitude towards menopause and quality of life. Climacteric. 2012;15(6):552-62.

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