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A Quick Analysis of Post-Menopause and the Syndrome Related to its Predisposing Factors

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ABSTRACT

One of the most important life transitions for women is menopause, which is accompanied by a number of physiological changes that have long-lasting effects on a woman's quality of life. Several theories have been put up on the signs and symptoms that arise prior to, during, and following the beginning of menopause. These symptoms, which together make up the syndrome that significantly affects the women in their post-menopausal life. This review makes an effort to comprehend these symptoms and their associated predisposing factors.

Keywords: Post menopause, Estrogen, Syndrome, Atrophy, Predisposing factors, and Dysfunction.

INTRODUCTION:

Menopause is the term used to describe the permanent end of menstruation, the inability of a woman to become pregnant, and the absence of menstruation for at least a year in a row. The diagnosis is made retroactively following a menstrual period-free interval of 12 months. The majority of women experience menopause between the ages of 49 and 52, with 51 being the mean age for women (Soma Thakur, 2018). Menopause that commences before age 40 is referred to as premature menopause. The phrase Post menopause is used to denote the period of time following menopause. When women reach post menopause, the monthly cycle seems to have been absent for more than a year. The reproductive years are over at this point in the course of women life, as women are no

longer ovulating. The menopausal symptoms previously felt could get better or go entirely. A decade or over following menopause, some women, however, continue to have menopausal symptoms. Postmenopausal women live at this period for one-third of their lives. The loss of ovarian follicles, which are the main source of estrogen, signifies primary ovarian failure. The bulk of symptoms are brought on by a lack of estrogen (Ezeiruaku and Onitsha, 2022).

However, it is challenging to distinguish it from other ageing-related symptoms (Soma Thakur, 2018). Vasomotor disorders, urogenital atrophy, osteoporosis, cardiovascular disorder, cancer, mental ailments, cognitive impairment, and sexual issues are the top health concerns for menopausal women. For better patient

care and health consequences for elder female patients, it is critical to comprehend the related risk factors, clinical manifestation, and therapy of typical menopausal symptoms. The term "postmenopausal syndrome" refers to the four primary symptoms-hot flashes, sleep disturbances, genitourinary ailments / sexual problems, and mood changes-that are most frequently experienced by the menopausal women (Santoro, 2015). Premature/early menopause is linked to a greater chance of type 2 diabetes, cardiovascular disease, all-cause mortality, poorer cognitive function, osteoporosis, and fractures, according to a number of studies. On the other hand, endometrial and breast cancer risk are greater in late menopause (Meng Wang, 2021). Determining the elements that contribute to age at natural menopause may therefore provide insight into the causes, early detection, and potential prevention of these pertinent diseases in later life. The age at menopause varies significantly among and within populations. Menopause is brought on by a low threshold number of predefined follicles in the ovary, according to prior research; however, it is still unclear what influences the rate at which follicles deplete and how this affects the time when menopause begins. With the exception of the genetic influences for age at natural menopause variation, the other determinants which influences are reproductive and lifestyle factors (Meng Wang, 2021). The menopause has got three stages, which are perimenopause, menopause and post menopause. Perimenopause is the period preceding menopause; menopause is the period that follows; and postmenopause is the final stage. Menstrual cycles become inconsistent and unpredictable throughout this time as hormonal changes begin to decline. Postmenopausal women are more susceptible to heart disease and osteoporosis than premenopausal women (NHS, 2021).

Predisposing factors the lower percentage of the circulating estrogen is the main cause of postmenopausal symptoms. The complicated changes that take place around menopause include hot flashes, vulvovaginal atrophy, and sexual dysfunction. There is a diminution in ovarian follicles, particularly the granulosa cells, at the level of the ovary. As a consequence, the ovary is unable to react to the hormones released by the pituitary. Due to a lack of feedback

inhibition, the levels of luteinizing and follicle-stimulating hormones (FSH and LH) rise, and the production of ovarian estrogen, progesterone, and inhibin stops (Freeman, 2007). Nonetheless, the remaining adrenal gland and the ovarian theca cells continue to produce androgen, which is later converted to estrogen through peripheral aromatization (Kligman, 2010).

According to cytological investigations, 90% of women are hypoestrogenic, and just 10% of them possess an estrogenic smear. The trigone of the bladder wall, the vaginal and urethral walls, as well as the pelvic muscles, all have estrogen receptors. Hence, the absence of estrogen stimulation results in atrophic alterations to the bladder and urethra in addition to the vagina. The depletion of lactobacilli and accompanying drop in glycogen content cause the vaginal acidity to lose its protective natural barrier against infections (Soma Thakur, 2018). A propensity to a range of genitourinary problems and recurring infections, particularly those caused by low virulence organisms, are clinical consequences of these alterations. Enhoming *et al.* have shown that *Proteus mirabilis* would be competent to develop and move about in mid cycle cervical mucus. The genitourinary tract's mucosal immune system is under the hormonal modulation of the genitourinary tract, as demonstrated by a dip in estrogen levels during the mid cycle that facilitated the proliferation of the organisms (Soma Thakur, 2018).

Hot Flashes

The causes of hot flashes are several. The thermoregulatory system is speculated to reset and narrow as a consequence of changes in or inadequate estrogen production. Alterations in estrogen and FSH levels have also been associated to hot flashes. It can possibly be connected to the 5-hydroxytryptamine receptor's (5-HT_{2A}) up-regulation in the hypothalamus as a result of the decreased serotonin level. It is believed that lower estrogen levels are accountable for the drop (Kligman, 2010). Hot flashes cause women to fail to attend work, interfere with daily tasks, and have trouble sleeping (Schiff, 1979). During the menopausal transformation, many women report having trouble focusing and being more vulnerable emotionally. Thyroid function tests should be done if there are any

concerns because the prevalence of thyroid disease rises as women age. Therefore, if the symptoms are unusual or resistant to treatment, thyroid function tests should be carried out (Pronob K Dalal, 2015).

Weight gain

Weight gain can happen to certain women before, during, or after menopause. During the menopausal progression, the follicular ovarian pool is continuously depleted, resulting in a decrease in estrogen production and a corresponding rise in androgen levels. By controlling lust and the satiety signals, this hormone imbalance changes energy homeostasis (Mauvais-Jarvis, 2013). Estrogen stops hunger signals from acting, reducing instances of excessive calorie eating. It is hypothesized that estrogen's ability to regulate hunger hormones is diminished throughout the menopausal transition as a result of changing estrogen levels (Kozakowski, 2017). Women passing through menopause have stronger hunger cues, which encourage them to eat more and acquire weight. The increased deposition of belly fat is also encouraged by the hormonal imbalance that occurs during menopause. As a result of high androgen levels and low estrogen levels, the fat in the gluteal and femoral regions to abdominal regions of the body, that favors abdominal obesity (Lumsden, 2015). Additionally, a higher level of abdominal obesity is a risk factor in and of itself for future metabolic issues (Lizcano, 2014). Hormonal dysregulation and its impact on energy balance are the main causes of menopausal obesity. These women's individual weight growth trajectories may differ due to a number of important factors, including bad eating habits, a sedentary lifestyle, and secondary reasons (hypothyroidism, cushing syndrome, and medication). Because of the hormonal diversity that occurs during menopause, the body may retain more fat and burn calories less effectively. The best technique to boost the body's capacity to burn calories is through activity and exercise. Stress management can be beneficial. Excess weight gain can be prevented through exercise, stress management, limiting caffeine and alcohol intake, quitting smoking, and eating a balanced diet. However, it is crucial to make clear that the women's weight gain isn't due to something else, like an underactive thyroid, especially if the problem runs in the family.

Sexual Dysfunction

Sexual dysfunction can result in diminished arousal or the inability to elicit an orgasm during sexual intercourse, as well as decreased interest or willingness to commence activities. Sexual dysfunction frequently has multiple contributing factors, which consists of psychological issues like depression or anxiety disorders, marital conflict, problems stemming from past physical or sexual abuse, drug use, or bodily issues that make sex uncomfortable, like endometriosis or atrophic vaginitis (Pronob K Dalal, 2015). After menopause, female sexual dysfunction is a complex issue with numerous etiologies. To maximize therapy, a thorough assessment of physiological, psychological, lifestyle, and relational factors is needed. Sexual function may be improved by anxiety and depression treatment, antidepressant drug adjustment, and relationship counseling. Many women and couples who experience sexual dysfunction benefit from specific exercises and activities that are frequently carried out with sex therapist supervision. Dyspareunia is effectively reduced when genitourinary atrophy is treated specifically with vaginal lubricants, systemic vaginal estrogen therapy, or both. In a significant randomized, double-blind, placebo-controlled investigation of women with erectile dysfunction, the utilization of sildenafil citrate proved ineffective (Basson, 2002). When menopausal women have low testosterone levels and no other known causes of their sexual dysfunction, androgen therapy may be an option for treatment (Bachmann, 2002). Patients who have a high risk of breast cancer, endometrial hyperplasia or cancer, cardiovascular illness, or hepatic disease should use androgen with caution. It may result in hirsutism and lower HDL levels. Since the body converts testosterone to estrogen, problems from estrogen therapy must be closely monitored. It also requires routine monitoring of the liver's function and cholesterol levels (Jayasena, 2019).

Urinary incontinence and Urinary tract infections

Menopausal women suffer sudden, strong desires to urinate, followed by an involuntary loss of urine, including the loss of urine when coughing, laughing, or raising. The tissues of the vagina & urethra also become less elastic. Urinary tract infections may also arise more frequently as a result of this. Pelvic floor

exercises can help with incontinence problems. Diabetes patients are more likely to develop asymptomatic bacteriuria, UTIs, & pyelonephritis (Kent, 2004).

Osteoporosis

Since estrogen plays a significant role in hormone metabolism and affects certain bone cells called osteoclasts, osteoblasts, and osteocytes, women following menopause are more likely to develop weak bones that may break more easily. After menopause, women may lose up to 25% of their bone mass (or 1% to 2% annually). The possibility of osteoporosis and bone fractures rises when too much bone is lost. The most frequently affected bones are those of the hip, wrist, and spine. Hormone replacement therapy, consistent exercise, & calcium or vitamin D supplements can all help with this (Meng-Xia Ji, 2015).

Cardiovascular disease

Compared to premenopausal women of roughly the same age, postmenopausal women appear to be more susceptible to cardiovascular disorders. The reduction in estrogen, particularly 17-oestradiol, is the most significant hormonal alteration that occurs after menopause. Heart disease, heart attack, and stroke are only a few of the cardiovascular disorders that estrogen helps to defend against (Miriam, 1999). The shift in cardiovascular determinants and the risk of cardiovascular morbidity are thought to be caused by this hormone. Regardless of the subject's age, it has been linked to a 2-20% increase in total serum cholesterol through a reduction in HDL cholesterol levels and a rise in LDL cholesterol, as well as a 2-35% increase in triglycerides and the high blood pressure (Sindhu Prabakaran, 2021). As per the studies, the hormone replacement treatment reduced the amount of atherosclerosis in human coronary arteries (Miriam, 1999). Diet, quitting smoking, and regular exercise are the main contenders for the preventing heart disease. Lowering the risk could also be accomplished by managing cholesterol levels, diabetes, and an increase in blood pressure (Sindhu Prabakaran, 2021). Cardiovascular disease Compared to premenopausal women of roughly the same age, postmenopausal women appear to be more susceptible to the cardiovascular disorders. The reduction in estrogen, particularly 17-oestradiol, is the most significant hormonal alteration

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Vulvovaginal Atrophy

Reduced estrogen levels could leads the tissues in the vagina to become thin and degenerate, making it to dry and cause atrophy, itching, burning, discharge, shortening of the vagina, uterine prolapse, & dyspareunia (Iuliia Naumova, 2018). Urogenital tissues are extremely sensitive to estrogen. Vaginal dryness can persist in postmenopausal women for long time after their last menstruation. Vaginal lubricants can aid in reducing any discomfort brought on by sex (Iuliia Naumova, 2018). Reduced estrogen levels may also affect the bladder and urine system, and many people experience urinary incontinence. By utilizing lubrication, topical lotions, or laser therapy, recurring dryness and painful intercourse can be prevented (Acog, 2021).

Mental health issues

Post-menopausal women frequently feel irritability, anxiety, and depression (Gita D. Mishra, 2003). Sexual tension, stress, or other difficulties in life that arise at this time could be the cause of this. Some people find it upsetting that they are past the reproductive years. Reduced hormone levels might also result in mood symptoms (Masakazu Terauchi, 2012).

Vaginal bleeding

It's not a typical after effect of declining hormone levels to experience modest, self-controlled vaginal bleeding which occurs during post menopause. Your vagina may occasionally get dry, which could result in some minor bleeding or spotting after intercourse. In other instances, it might be an indication of malignancy, an infection like endometritis, a disease like endometrial hyperplasia or uterine fibroids, or both (Shaikh Zinnat Ara, 2021).

CONCLUSION:

A Plenty of postmenopausal women's health issues due to the population of postmenopausal women growing along with life expectancy. Thus the, postmenopausal health should indeed be given the attention it deserves in the present circumstances. It is important to make an effort to dispel the worries and fears of the ladies who are less informed of the numerous symptoms. The onset of symptoms in conjunction to menopause varies. While some women go through perimenopause with earlier symptoms, others go through it with later symptoms. Debatable is the timing of the initiation of treatment. It has been challenging to discern between symptoms brought on by ovarian function decline and those brought on by ageing or the strains of midlife society. Hormone replacement therapy is supposed to help symptoms brought on by ovarian function loss go away, however this hasn't been observed.

In this area, more study is necessary. The onset of symptoms in regards to menopause varies. While some women go through perimenopause with the earlier symptoms, others go through it with later symptoms.

CONFLICTS OF INTEREST:

There is no conflict of interest.

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REFERENCES:

- 1) Bachmann G, et al. (2002). Female androgen insufficiency: The Princeton consensus statement on definition, classification, and assessment. *Fertil Steril*, **77**, 660-5.
- 2) Basson R, McInnes R, and Koppiker N. (2002). Efficacy and safety of sildenafil citrate in women with sexual dysfunction associated with female sexual arousal disorder. *J Womens Health Gend Based Med*, **11**, 367-77.
- 3) Ezeiruaku FC., and Onitsha EN. (2022). Assessment of biochemical markers in polycystic ovarian syndrome patients in the Niger Delta region, Nigeria. *Eur. J. Med. Health Sci.*, **4**(4), 100-110.
<https://doi.org/10.34104/ejmhs.022.01000110>
- 4) Freeman EW, Sammel MD, and Sheng L. (2007). Symptoms associated with menopausal transition and reproductive hormones in midlife women. *Obstetrics and gynecology*.
- 5) Gita D. Mishra, Wendy J. Brown, and Annette J. Dobson. (2003). Physical and mental health: Changes during menopause transition. *Quality of Life Research, springer*, **12**, 405-412
- 6) Iuliia Naumova and Camil Castelo-Branco. (2018). Current treatment options for postmenopausal vaginal atrophy. *Int J Womens Health*, **10**, 387-395.
<https://doi.org/10.2147/IJWH.S158913>
- 7) Jayasena CN, Franks S, and Dhillon WS. (2019). A systematic review of randomized controlled trials investigating the efficacy and safety of testosterone therapy for female sexual dysfunction in postmenopausal women. *Clinical endocrinology*.
- 8) Kent K. Hu, Edward J. Boyko, and Stephan D. Fihn. (2004). Risk Factors for Urinary Tract Infections in Postmenopausal Women. *Arch Intern Med*, **164**, 989-993.
<https://doi.org/10.1001/archinte.164.9.989>
- 9) Kligman L, Younus J. (2010). Management of hot flashes in women with breast cancer. *Current oncology (Toronto, Ont.)*.
- 10) Kozakowski J, Gietka-Czernel M, and Majos A. (2017). Obesity in menopause - Our negligence or an unfortunate inevitability? *Prz Menopauzalny*, **16**, 61-5.

- 11) Lizcano F, Guzmán G. (2014). Estrogen deficiency and the origin of obesity during menopause. *Biomed Res Int.*, 757461.
- 12) Lumsden MA, Hor K. (2015). Impact of obesity on the health of women in midlife. *Obstet Gynaecol*, **17**, 201-8.
- 13) Masakazu Terauchi *et al.* (2012). Associations between anxiety, depression and insomnia in peri- and post-menopausal women. *Maturitas, Elsevier*, **72**(1), 61-65
- 14) Mauvais-Jarvis F, Clegg DJ, Hevener AL. (2013). The role of estrogens in control of energy balance and glucose homeostasis. *Endocr Rev*, **34**, 309-38.
- 15) Meng-Xia Ji and Qi Yu. (2015). Primary osteoporosis in postmenopausal women. *Chronic Dis Transl Med*, **1**(1), 9-13.
<https://doi.org/10.1016/j.cdtm.2015.02.006>
- 16) Meng Wang *et al.* (2021). Factors related to age at natural menopause in China: results from the China Kadoorie Biobank. *Menopause: The J. of the North American Menopause Society*, **28**(10), 1130-1142.
- 17) Miriam J.J. de Kleijn, Yvonne T. van der Schouw, Yolanda van der Graaf. (1999). Reproductive history and cardiovascular disease risk in postmenopausal women: A review of the literature. *Maturitas, Elsevier*, **33**(1), 7-36
- 18) National Health Service. Postmenopausal Bleeding.
<https://www.nhs.uk/conditions/post-menopausal-bleeding/>
- 19) Pronob K Dalal, Manu Agarwal. (2015). Postmenopausal syndrome. *Indian J Psychiatry*, **57**(2), S222–S232.
<https://doi.org/10.4103/0019-5545.161483>
- 20) Santoro N, Epperson, CN, Mathews SB. (2015). Menopausal Symptoms and Their Management. *Endocrinology and metabolism clinics of North America*.
- 21) Schiff I, Regestein Q, Tulchinsky D, Ryan KJ. (1979). Effects of estrogens on sleep and psychological state of hypogonadal women. *JAMA*, **242**, 2405-4.
- 22) Shaikh Zinnat Ara Nasreen, Nusrat Mahjabeen, Safinaz Shahreen, (2021). Postmenopausal Bleeding: An Update. *European J. of Medical and Health Sciences*, **3**(1), 28- 33.
- 23) Sindhu Prabakaran, Arielle Schwartz, and Gina Lundberg. (2021). Cardiovascular risk in menopausal women and our evolving understanding of menopausal hormone therapy: risks, benefits, and current guidelines for use. *Ther Adv Endocrinol Metab*, **12**, 20420188211013917.
- 24) Soma Thakur, Manoj Kumar, and Mahesh Prasad. (2018). Study of Cervical Cytology (Pap Smear) in Symptomatic Postmenopausal Woman in Tertiary Care Hospital. *JMSCR*, **6**(6), 38-43.
- 25) The American College of Obstetricians and Gynecologists. The Menopause Years.
<https://www.acog.org/womens-health/faqs/the-menopause-years>

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