

## Understanding “Menopause”: An Inevitable Life Change

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### Introduction

Starting from birth there are many biological, physiological and psychological changes in women's life from puberty to menopause. Starting from menstrual cycle during puberty, there is usually a monthly menstrual cycle to its permanent cessation which is called as menopause. When the menstrual cycles stop for a period of 12 months is known as menopause, occurs due cessation of ovarian function.

The process of menopause [1] is not an abrupt change but it's a gradual process. The age at which menopause occur ranges between 45 - 55 years, the average being 50 yrs. But there is no reliable test to predict when a women will experience a menopause, thus it's a retrospective diagnosis. The menopausal transition starts with varying menstrual cycle lengths and end with the final menstrual periods. Peri-menopause is a term sometimes used to describe “the time around menopause “in the same way postmenopausal is the period after menopause.

Due to increased life expectancy about 1/3rd of women's life will be spent in a postmenopausal period.

### Discussion

**Hormonal Changes During Menopause:** Some year prior to menopause, there is depletion of ovarian follicles and follicles become resistant to pituitary Gonadotrophins – which leads to decreased oestradiol production [2], this decreases the negative feedback effect on Hypothalmo-pituitary Axis resulting in increased FSH- which subsequently causes increased LH. Then as the follicle count decreases oestrogen production drops down to optimum level of 20 pg/ml which is necessary for endometrial growth leading to absence of menstrual cycles.

As ovarian oestrogen production decreases, ovarian stromal cells continue to secrete Androgens because of increased LH. Resulting in decreased Oestrogen: Androgen ratio causing facial hairs to grow and change in voice after menopause. Obese patients convert more Androgen into oestrogen and so less likely to develop symptoms of oestrogen deficiency and osteoporosis, but they are more prone for endometrial hyperplasia and endometrial carcinoma.

Along with changes in oestrogens and progesteron and androgens there is increased secretion of both FSH and LH due to absent feedback effect of Oestradiol or due to enhanced responsiveness of pituitary to gonadotrophin releasing hormone (GNRH). Along with hormonal changes there are changes in other body organs also.

1. Ovarian shrinkage with cortical thinning and increased medulary component.
2. Uterus becomes smaller with body of uterus to cervix ratio 1:1
3. Vagina loss its elasticity and becomes narrower. PH becomes alkaline.
4. Breasts become flat and pendulous due to fat reabsorption and gland atrophy.
5. Bladder and urethral epithelium undergoes atrophic changes with recurrent urinary tract infection.
6. Muscle tone decreases which may lead to pelvic organ descent or prolapse.

Menopause not only is associated with absence of menstruation but it causes many genitourinary, vasomotor and psychological symptoms [3] and few health hazards due to hormonal deficiency, most prominent of which is “HOT FLUSHES”. A flash is a feeling of warmth spreading over body and pronounced in the head and chest, may sometimes associated with facial flushing and followed by intense perspiration, lasting usually for 30 sec to few minutes. Approximately 40% of women in menopausal period may feel the flashes sometimes or the other. Presently there is no diagnostic test or method which will predict when hot flushes will occur and how long will they last. Sometimes they are associated with night sweats which may cause awakening or there is difficulty in falling asleep and associated daytime tiredness.

Few women in menopausal period may develop thinking and emotional symptoms which includes but not limited to irritability, fatigue, sudden mood changes or mood swings and memory problems.

Genitourinary symptoms also predominate in this period including atrophic vaginitis, endometritis, urinary urgency, frequency, dysuria, stress urinary incontinence and recurrent urinary tract infections.

Significant health hazards related to menopausal periods directly due to hormonal deficiency are osteoporosis and cardiovascular diseases. Following menopause there is decline in collagenous organic matrix affecting vertebral bodies, femoral neck and distal end of radius with greater liability for fractures. Also there is increased orthoclastic activity leading to greater bone resorption.

Prior to menopause women have a decreased risk of heart disease [4] and stroke as compared to men but around menopause the risk for cardiovascular diseases increases, may be due to rise in lipid levels of both triglycerides and cholesterol and LDL increase is more as compared to HDL which is cardio protective.

Presently for diagnosing menopause no single reliable hormonal or any other test is available but few tests can be done as an indicator with retrospective absence of menses for 12 months as diagnostic tool.

Some indicators:

- Cessation of menses for a continuous period of 12 months.
- Serum oestradiol level less than 20 pg / ml
- Serum LH and FSH level more than 100 mIU/ml.
- Vaginal cytology smear showing features of low oestrogen maturation index.

### Conclusion

Menopause is a normal part of life and not a disease that require treatment. However treatment of associated symptoms [5] is necessary if they are severe and causing lifestyle disturbances. Starting with non hormonal treatment which includes healthy nutritious diet, regular exercise, supplementary calcium and in some cases selective serotonin reuptake inhibitors shown to be effective in reducing hot flashes in around 60% of symptomatic women's and not the least Clonidine– an alpha adrenergic agonist may be used to reduce the severity and duration of hot flashes.

Hormone replacement therapy is indicated to overcome the short term and long term consequences of oestrogen deficiency, and to ensure potential benefits and to minimize the risks. And to prevent osteoporosis, atherosclerosis, cardiovascular diseases, urogenital atrophy and degenerative skin changes.

Hormone replacement therapy due to its effect on lipid metabolism is cardio protective .it lowers LDL and increase HDL [7]. Oestrogen also has direct effect on blood vessels by increasing prostacyclin secretion which has a vasodilator effect on blood vessel with consequent increase in blood flow. Also prostacyclins are antiplatelet aggregator. So less chances of intravascular blood clotting.

HRT helps in osteoporosis [6] by preventing the bone loss caused due to bone resorption. So HRT can be given to prevent these complications except few contraindications for HRT:

- History of Breast Cancer
- Presence of Thrombophlebitis
- Endometrial Carcinoma
- Active Liver Disease

Some local acting hormonal preparations are available in the form of vaginal oestrogen rings, oestrogen tablets, to avoid the systemic side effects and to prevent vaginal dryness. Also vaginal moisturizing creams and lotions can be used to alleviate the symptoms. Alternative medicine in the form of Isoflavons [8] can be used in relieving the symptoms of hot flashes. And other symptoms of menopause. Isoflavons are phyto-estrogens or plant derived oestrogens, they have chemical structure similar to naturally produced oestrogens but with lesser efficacy.

Along with medical management some lifestyle modifications in the form of healthy diet, regular exercise, yoga and meditation will help to cope up with the symptoms of menopause and will help to better adjust to this inevitable change in every women's life.

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