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Comprehensive Study

HRT in Menopause and Role of Nurse

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Introduction

- Menopause is defined as the permanent physiological cessation of menstruation at the end of reproductive life due to loss of ovarian follicular activity. It is the point of time when last and final menstruation occurs.
- Climacteric is the phase of aging process during which a women passes from the reproductive to non reproductive stage. This phase covers 5-10 yrs on either side of menopause.
- Pre menopause is the part of climacteric before menopause, when menstrual cycle is likely to be irregular. Post-menopausal is the phase that comes after menopause.
- Menopause is the time of cessation of ovarian function resulting in permanent amenorrhea. It takes 12 months of amenorrhea to confirm that menopause has set in and therefore it is a retrospective process.
- The menopause is defined as "ovarian failure due to loss of ovarian follicular function accompanied by estrogen deficiency resulting in the permanent cessation of menstruation and loss of reproductive function".

Utain-1990

Age of menopause

Age of menopause is genetically predetermined. The age of menopause ranges between 45-55 yrs., average being 50. Cigarette smoking and severe malnutrition may cause early menopause [1-8].

Endocrinology of climacterics and menopause

- Few years prior to menopause, depletion of ovarian follicles occurs and the existing follicles become resistant to gonadotropins. This results in impaired folliculogenesis and diminished estriol production. The serum estriol levels fall from 50-300pg/ml before menopause to 10-20 pg/ml after menopause. This decrease the negative feedback effect on hypothalamopitutiary axis resulting in increase in FSH.
- The diminished folliculogenesis result in an ovulation, Oligo-ovulation and corpus luteum insufficiency. The sustained level of estrogen may cause endometrial hyperplasia and menstrual abnormalities.
- Shortening of follicular phase leads shorter menstrual cycles.
- There is fall in levels of prolactin and inhibitin.
- Ultimately, there is no more follicles response to gonadotropins. Estradial production drops and endometrial growth stops resulting in absence of menstruation.

Organ changes

- Genitourinary system
- Ovaries shrink in size, become wrinkled and white. Thinning of cortex and abundance of stroma cells occurs.
- Fallopian tubes show features of atrophy. The muscle coat becomes thinner, the cilia disappear and the plicae become less prominent.
- Uterus becomes smaller, endometrium becomes thin and atrophic. The cervical secretions become scanty.
- The vagina becomes narrow due to gradual loss of elasticity. The rugea progressively flatten, PH becomes alkaline.
- Vulva shows features of atrophy. The labium becomes flattened and pubic hair becomes scantier resulting in narrow introitus.

- Breast fat gets reabsorbed and the glands atrophy. Nipples decrease in size, breast become flat and pendulous.
- Bladder and urethra _ the epithelium becomes thin and is more prone to damage and infection.
- Loss of muscle tone leads to pelvic relaxation, uterine descend and anatomic changes in urethra and neck of bladder.
- **Skeletal system:** Following menopause, there is loss of bone mass by about 3-5% per year due to deficiency of estrogen leading to osteoporosis.
- **Cardiovascular system:** Deficiency of estrogen increases the risk of cardiovascular disease because of its function of decreasing HDL, cholesterol and antioxidant property.

Menopausal symptoms

Majority of women do not experience any symptom apart from cessation of menstruation. So women experiences symptoms and health concerns.

- **Vasomotor symptoms:** The characteristic symptom of menopause is "hot flush". It is characterized by sudden feeling of heat followed by profuse sweating with cutaneous vasodilatation.
- **Genital and urinary symptoms:** Atrophy of epithelium of vagina, urinary bladder and urethra causes dyspareumia, vaginal infections, dryness, prurities and leucorrhea. Urinary symptoms include urgency, dysurea, stress incontinence and frequent UTI.
- **Psychological symptoms:** Estrogen deficiency is associated with decreased sexual desire. There may be psychological changes such as increased anxiety, headache, insomnia, irritability, dysphasia and depression. Dementia, mood swings and inability to concentrate also seen.
- **Osteoporosis:** Occurs due to estrogen loss, deficiency of calcium and vitamin D or hereditary. It may also lead to back pain, loss of height and kyphosis and fracture of bones. Fracture may involve vertebral body, femoral neck or distal forearm.
- **Cardiovascular and cerebrovascular effects:** Risks of ischemia, heart diseases, coronary artery diseases and stroke are increased due to atherosclerotic changes, vasoconstriction and thrombus formation.

Diagnosis of menopause

- Cessation of menstruation for 12 consecutive months during climacteric.
- Occurrence of hot flushes and night sweats.
- Features of low estrogen on vaginal cytology.
- Serum estriol < 20 pg/ml
- Serum FSH and LH > 40 pg/ml at one week interval for 3 times.

Management

Counseling

Adequate explanation to every woman with symptoms may help understand and accept the changes. Those who have artificial and early menopause due to bilateral oophorectomy or radiation may require more reassure.

Non-hormonal treatment

- Nutritious diet _ balanced with proteins and calcium
- Supplementary calcium_ total daily requirement of calcium is 1.5 gms.
- Exercises _ walking, jogging, weight bearing exercises.

To follow healthy lifestyle, health promotion, health promotion and regular health screening

- Supplementation with vit. D 400-800 IU/day
- Cessation of smoking and alcohol
- HRT- replacement of estrogen and progestin are prescribed for women with premature ovarian failure, gonadal dysgenesis, and surgical or radiation menopause.

Harmonal replacement therapy

HRT is a treatment used to replace hormones that the body is no longer producing because of menopause. HRT refers to a woman taking supplements of hormones such as estrogen alone or estrogen with another hormone called progesterone (progestin in its synthetic form). HRT replaces hormones that a women's body should be making or used to make.

The therapy is based on the notion that the treatment may prevent discomfort caused by diminished circulating estrogen and progesterone hormones. It involves the use of one or more of a

group of medications designed to artificially boost hormone levels. The main types of hormone involved are estrogens, progesterone or progestins and sometimes testosterone. It is often referred to as "treatment" rather than therapy. HRT may be delivered to the body via patches, tablets, creams, IUDS, vaginal rings, gels or more rarely by injection.

Indications

Generally, health care providers prescribe HRT for two groups of women. Women going through menopause and who had already gone through it (called post menopausal) the nature levels of these hormones drop during menopause. This drop can lead to symptoms such as hot flushes, night sweats, vaginal dryness and sleep disturbance. HRT may also be used to lessen some of these symptoms. Woman with certain health conditions _ in some case, women's body does not make normal levels of hormones because of medical conditions such as premature ovarian failure. For these women, HRT replaces the hormones that their body should be making.

Benefits and risks of HRT

HRT is one of the most extensively studied medical treatments

- **Controlling symptoms of menopause:** The major benefits of HRT are that it has proved very successful in controlling the symptoms of menopause such as dryness, itching, burning and discomfort with intercourse.
- **Reduced risk of osteoporosis:** It can reduce the risk of developing osteoporosis and cancer of colon and rectum. However, the long term use of HRT to prevent osteoporosis is not usually recommended.
- **Slightly raised risk:** HRT slightly raises the risk of developing certain conditions such as breast cancer, endometrial cancer, ovarian cancer and stroke.

Types of HRT

HRT has mainly 3 types.

- **Estrogen only HRT:** It is usually recommended for women who have had their womb and ovaries removed by hysterectomy. Progesterone is no longer needed as there is no risk of endometrial cancer.
- **Cyclic HRT:** It is also known as sequential HRT. It is recommended for a woman who is experiencing menopausal symptoms but is still having periods. It is further of two types.
- **Monthly HRT:** Daily dose of estrogen and progestrogen (a group of hormones including progesterone) at the end of menstrual cycle for 14 days. It is recommended for women who are having regular periods. They will continue to have monthly periods until menopause cause them to stop.
- **3 monthly HRT:** Continuous HRT is usually recommended for woman who is post menopausal. It involves taking a continuous combination of estrogen and progestrogen.
- **Continuous HRT:** It is usually recommended for women who are post menopausal. It involves taking a continuous combination of estrogen and progestrogen.

Treatment methods of HRT

Oral therapy

Many different estrogen tablets, some are fixed dose regimens others minimize menstrual flow by changing dose for 28 days. Tablets easy to take, effects reversed quickly but causes side effects.

- Oral preparations
- Conjugate Equine Estrogen (Premarin): 0.625 mg/24hrs
- Micronized E2 (Esterase and others): 1-2 mg/24hrs
- E2 Valerate (Progynova): 2 mg/24hrs
- Ethinyl E2 (Estinyl and others): 0.01 mg/24hrs.

Tran dermal HRT

It has 2 forms. Skin patches and estrogen gels, both absorbed through skin into blood stream, bypass the liver. Rapid absorption provides fast and effective relief (Sturdee, 2000). Some patches are estrogen only some estrogen + progesterone. Changed twice a week, some 7 day system are available Well tolerated, can cause skin irritation. Two estrogen gels (1) pump action canister, making dose adjustment easy (2) sachets. Spread on arm, shoulder and inner thigh. Alcohol based, non greasy, seldom cause skin irritation. Hysterectomy women uses unopposed estrogen gels, others need to take progesterone tablets or patches.

Tran dermal E2 patches (Estraderm) 0.05 mg/24hrs.

3.5 day or 7 day patches.

Percutaneous E2 gel 1.5 gm of gel containing estrogen and other newer gels app. 0.05 mg of E2.

Estrogen implants

Pellets of estrogen inserted into fat under skin, last for 6 months, women need not to remember taking of tablets or patch changes, difficult to remove, women with uterus need additional progesterone.

Vaginal creams, patches, pessaries and rings

Useful to women affected by genital symptoms like vaginal dryness, accompanied by cyclic progestrogen because systemic absorption can stimulate growth of endo metrum.

Side effects of HRT

Common

- Headache, Stomach upset
- Diarrhea, Nervousness
- Appetite and weight changes
- Changes in sex drive
- Brown or black patches on skin, acne
- Swelling of hands, feet or lower legs due to fluid retention
- Breast tenderness.

Uncommon

- Double vision
- Severe abdominal pain
- Yellowing of skin or eyes
- Severe depression
- Unusual bleeding
- Dark colored urine and light colored stool
- Chorea
- Changes in menstrual flow
- Loss of appetite, skin rashes.

Contraindications of HRT

- Absolute contraindications - un diagnosed vaginal bleeding, severe liver diseases, pregnancy, coronary artery diseases, venous thrombosis, breast cancer
- Relative contraindications - migraine headache, seizure disorder. Severe degree of varicose veins, personal history of Ca breast, history of uterine fibroids, cholecystitis, Cholangitis.

Alternative therapies

- One study indicated 68 percent of women have tried alternative therapies and 62 percent were satisfied with the results. Diet and Exercise are the most common.
- Soy isoflavones in soy products. Relieves a number of symptoms, including hot flashes, night sweats, fatigue and vaginal dryness. Soy has also been shown to assist the body in absorbing and retaining calcium, suppress bone loss, lower LDL cholesterol and decrease blood clotting. Recommended daily amount is 25 grams of soy protein and 30-50 mg of isoflavones as a starting amount and could gradually increase to two to three times that amount. Seen to reduce symptoms in 4 out of 10 women.
- Black Cohosh has been seen to reduce hot flashes. Potential for liver damage and shouldn't take more than 6 months
- Calcium, magnesium and vitamins D and E. Magnesium promotes bone density. RDA is 600 mg, although most Americans only consume 300 mg
- Exercise: A study in Sweden showed that out of 1,323 women, 15 percent sedentary women demonstrated hot flash symptoms compared to only five percent of the physically active subjects. Weight bearing exercises and strength training strengthens bones and muscles, enhances self-esteem and creates a positive outlook, promotes sleep and increases levels of neurotransmitters in the brain. Serotonin (calming effect), endorphins (pain killers), and dopamine (alertness and concentration).
- Smoking cessation
- Reduces risk for pretty much everything!
- Avoiding spicy foods for those who get heartburn. Can reduce severity and frequency of hot flashes
- Limiting or eliminating caffeine. Promotes sleep
- Relaxation methods. Helps with mood swings/irritability
- Antidepressants - SSRI type e.g. Paroxetine 12.5mg increased up to 25 mg/day. Floxitine 10mg increased up to 20 mg/day. effective in treating symptoms of hot flushes
- Clonidine 75 mgm/day used to treat high blood pressure, hot

flushes. Not used if depression or insomnia is experienced, as it worsens the symptoms.

- Acupuncture
- Reflexology
- Controlling weight and avoiding weight gain
- Preparing for hot weather by wearing layers of clothing and bringing a small fan.

Nurses role

- Helping women to cope during and after menopause, offering individual assessment, education and support.
- Enable women to make informed decisions on approximate treatment.
- Simple life style changes like exercise 21/2hr moderate aerobic activity every week and weight loss BMI to 25 kg/m^2 or less can reduce vasomotor symptoms.
- Adequate calcium intake helps to maintain bone health and vitamin D.
- Stop smoking: reduces flushes and osteoporosis risk, improves response of HRT.
- Avoiding alcohol, spicy foods, and stimulants like caffeine decreases flushes and sweats.
- Wear lighter natural fiber clothes and sleeping in cool room.
- Yoga, meditation and mindfulness training reduces stress and anxiety.
- Education that HRT can improve symptoms of menopause.
- Help to provide weaning schedule specific to needs.

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