

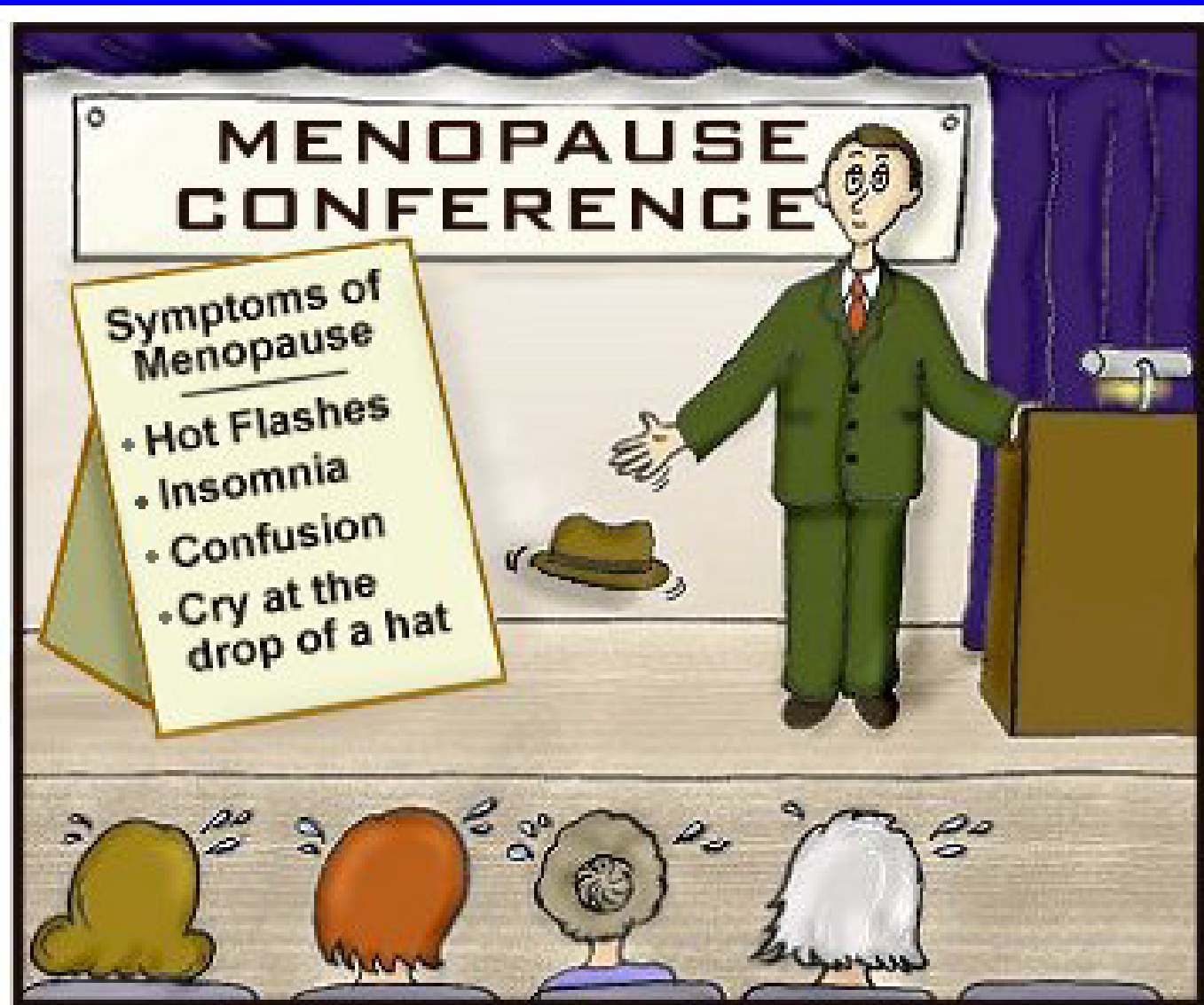
Post-Menopausal Health and HRT

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Announcements

- Upcoming Office Hours: 1 Wellman Court
 - Friday – April 30 from 1-2pm
 - Wednesday – May 5 from 2-3 pm
 - Thursday – May 6 from 3-4 pm
- Final Review: Location TBA
 - Wednesday May 12 or Thursday May 13
 - Most Likely 3-6 pm
 - 2 Hours Organized Review
 - 1 Hour + for office hours and other questions



In an effort to test the symptoms scientifically...

Problems Associated With Menopause

- Hot Flashes
- Night Sweats
- Sleeplessness
- Vaginal Dryness
- Osteoporosis
- Cardiovascular Disease
- CNS

Menopausal Hormone Use

- Also referred to as:
 - Hormone Replacement Therapy (HRT)
 - Postmenopausal Hormone Use
 - Estrogen Replacement Therapy (ERT)
 - Conjugated Estrogen + Progestin Replacement Therapy (HT)
- Prescribed to treat some of the problems associated with menopause

Types of Hormones Used

- Estrogens
 - Used alone or in combination with progestin
 - Approximately doubles the level of menopausal estrogen
 - Optimal dose is the lowest dose to treat symptoms over the shortest duration
- Progestins
 - Initially used in conjunction with Estrogen to reduce risk of endometrial cancer
 - In 2002 the WHI stopped a trial using Estrogen + Progestin finding the risks outweighed the benefits

Risks of HT

- Estrogen + Progestin
 - Increases Risk of:
 - Breast Cancer
 - Heart Disease
 - Stroke
 - Blood Clots
 - Dementia
 - Decreased Risk of:
 - Hip Fractures (Osteoporosis)
 - Colon Cancer

Risks of ERT

- Estrogen Alone
 - Only given to women that have had a hysterectomy
 - E alone is a risk factor for endometrial cancer
 - Does not improve long-term health
 - Decreases risk of fractures (osteoporosis)
 - Increases risk of stroke
 - May increase risk of ovarian cancer
 - Does not significantly effect coronary heart disease
 - Does not significantly alter breast cancer incidence

Benefits of HRT



- Relieves Short-Term Symptoms of Menopause:
 - Hot Flashes
 - Sweats
 - Disturbed Sleep
- May also help prevent colon cancer and age-related vision loss

Estrogen Influence on Non-Reproductive Systems

- Skeletal System
 - Osteoporosis
- Cardiovascular System
 - Coronary Heart Disease vs. Stroke
- Central Nervous System
 - Anxiety/Depression
 - Memory and Cognitive Effects

Skeletal System

- Osteoporosis
 - Loss of bone mass and density leading to bones become fragile and susceptible to fractures
 - This process is accelerated following menopause due to low levels of estrogen
 - Bone mass reaches a peak at menarche but is continuously recycled throughout life through the interaction of many regulatory factors
 - Bone loss occurs when recycling process favors matrix breakdown over matrix formation

HRT and Osteoporosis

- Estrogen alone and estrogen with progestins have been shown to protect against osteoporosis
- Estrogen provides negative feedback on osteoblasts and diminishes the rate that the bone matrix is reabsorbed
- Estrogen and Progestin use shows a decreased risk for hip, spinal, and other fractures independent of sub-class (age, smoking, fracture history, etc.)
- Benefits require long-term use of hormones

Cardiovascular System

- At menopause:
 - Rate of myocardial infarction increases 3 fold
 - Cerebrovascular disease rises rapidly
 - Was thought that estrogen decline played a role in these increased risks
 - Thought that estrogen deficiency leads to decreased catabolism of LDL and decreased HDL production
 - Thought that estrogen plays role in protecting endothelial cell wall possibly protecting against thrombosis
- Thought that estrogen therapy would provide protection against coronary heart disease and possibly strokes

HRT and Heart Disease

- Recent findings from WHI show that taking HT increases a woman's risk for heart disease, stroke, and pulmonary embolism
- U.S. Protective Task Force:
 - Women who have gone through menopause should not be given HT to prevent heart disease or treat other chronic conditions
- Currents studies on ERT show:
 - Increased risk of stroke by 39%
 - No significant change in occurrence of coronary heart disease

Central Nervous System

- Psychological Effects of Menopause
 - Anxiety and mood swings are common symptoms associated with menopause
 - Thought that HRT can improve mood disorders associated with postmenopausal transition
 - Recent 3 year study showed no significant difference between placebo and HT in quality of life issues
 - May not be relevant to women experiencing severe symptoms
 - In these cases, HT may provide benefits

Central Nervous System

- Cognition and Memory
 - Was thought that estrogen influenced cognition and memory
 - Might be protective against neurodegenerative disease
 - May improve certain cognitive functions
 - Immediate and delayed recall
 - May improve acetylcholine dynamics to enhance learning and memory

Current CNS Studies

- WHI study shows HT (estrogen+progestin) doubled risk for developing dementia
 - This includes risk of Alzheimer's Disease
- HT adversely affects cognitive function in women over 65
- HT does not protect against mild cognitive impairment
- NIA recommends that HT not be given to postmenopausal women to maintain cognitive function
- Report from WHI on ERT expected in next couple of weeks

Unexpected Consequences of HRT: Cancer

- Endometrial Cancer
 - Unopposed long-term estrogen exposure is a risk factor
 - Progestin was originally added to the HRT to alleviate this risk
 - HT risk for cancer is much less than ERT
 - Women who have undergone a hysterectomy generally given estrogen alone

HRT and Cancer

- Ovarian Cancer
 - Slight increased risk for estrogen alone
 - May be an increased risk with HT as well, but more studies need to be completed to be statistically significant

HRT and Breast Cancer

- WHI reported in 2002 that estrogen plus progestin increases the risk of invasive breast cancer by up to 26% over a 5 year study
- Recently released information of estrogen alone indicates no significant increase for breast cancer
- Other studies indicate that HT and ERT both increased associated risks
- HRT makes breast more dense thus making it more difficult to detect tumors
- Study also finds that within 5 years of stopping hormone use risk of cancer declines

Breast Cancer

- Most common cancer in women
 - Risk of Women Developing:
 - from age 30 to age 40 . . . 1 out of 252
 - from age 40 to age 50 . . . 1 out of 68
 - from age 50 to age 60 . . . 1 out of 35
 - from age 60 to age 70 . . . 1 out of 27
 - Ever 1 out of 8

Risk Factors

- Reduced # of full-term pregnancies
 - 1st full-term pregnancy before age of 20 reduces risk by 50%
- Increased age at 1st pregnancy
- Early menarche
- Later Menopause
- Post-menopausal obesity
- Hormone Replacement Therapy
- Alcohol in excess of 60g per day

Protective Factors Against Breast Cancer

- Young age at 1st full-term pregnancy
- Prolonged lactation following child birth
- Exercise

Research On Campus

- Nandi Laboratory
 - Studies parity protection against breast cancer
 - Goal is to understand mechanism by which parity provides protection and thus be able to develop better strategies for prevention of breast cancer
 - Seeks to replicate protective environment through the use of exogenous hormones given over a short amount of time
 - Uses a Rat Model

Recent Results

- Short-term treatment with high pregnancy levels of estradiol with or without progesterone is highly effective in decreasing cancer incidence
- Short-term treatments with natural or synthetic ovarian steroids are effective in long-term protection against induced carcinogenesis in rats

Summary of HRT

- HT Risks
 - Heart Disease
 - Breast Cancer
 - Stroke
 - Blood Clots
 - Dementia
- ERT Risks
 - Stroke
- HRT Benefits
 - Improves risk of osteoporosis
 - Effective Treatment for:
 - Hot Flashes
 - Vaginal Discomfort
- Based on current findings:
 - HRT should only be used as short-term therapy with the lowest possible effective dose
- Do Not Take for:
 - Memory Loss
 - Heart Disease/Strokes

Resources

- National Heart, Lung, and Blood Institute Information Center
Internet Address: <http://www.nhlbi.nih.gov/health/women/index.htm>
- National Institute on Aging
Internet Address: <http://www.nih.gov/nia/>
- National Cancer Institute
Internet Address: <http://www.nci.nih.gov/>
- National Center for Complementary and Alternative Medicine
Internet Address: <http://nccam.nih.gov/>
- North American Menopause Society
Internet Address: <http://www.menopause.org/>
- American College of Obstetricians and Gynecologists
Internet Address: <http://www.acog.org/>
- The Hormone Foundation
Internet Address: <http://www.hormone.org/>
- Women's Health Initiative (1-800-54-WOMEN)
Internet Address: <http://www.nhlbi.nih.gov/whi/index.html>