Amerasinghe A.D.K., Weerappuli Gamage S.I.J

MENOPAUSE HORMONE THERAPY AND CARDIOVASCULAR DISEASES IN WOMEN

Tutor: senior lecturer Birulya A.A
Department of Cardiology and Internal Diseases
Belarusian State Medical University, Minsk

Menopause Hormone Therapy (MHT), also known as Hormone Replacement Therapy (HRT), is a modern treatment carried out to replace the estrogen and progesterone as their production ceases during menopause. MHT is proven to be effective in the management of common symptoms such as night sweats and hot flushes and also helps preserve bone density. MHT is considered safe to use for most women in their 50s or for the first ten years after the onset of menopause.

There are several types of MHT available as tablets, vaginal treatments, patches, and gels. MHT type depends on the age, whether the person has had a hysterectomy, or whether the person has other health conditions. A woman who has not received a hysterectomy needs to undergo a combined treatment of estrogen and progestogen (natural progesterone and progestins). Progestogens, including norethisterone, medroxyprogesterone, one dydrogesterone, and micronized progesterone, are added to the treatment plan to reduce uterine cancer risk. For women who have undergone hysterectomy, estrogen alone is more suitable.

Studies have found that MHT with estrogen affects the hypothalamus. During menopause, estrogen levels drastically reduce, and in turn, the neurokinin B signaling pathway becomes overactive, and the hypothalamus mistakenly triggers heat loss mechanisms such as night sweats and hot flushes. When MHT is received, estrogen suppresses the neurokinin B signaling pathway, causing the median preoptic nucleus to get stabilized. This reduces triggering of heat loss mechanisms and helps to raise the threshold for triggering a hot flash. MHT has an effect in the vagina and urinary tract too. Estrogen binds to the estrogen receptor alpha, which is present in the vaginal epithelium. This triggers cell proliferation, increased glycogen production, and increased blood flow resulting in more elastic and thicker tissue reducing vaginal dryness. This also improves urinary incontinence. The effect of MHT in bone is as follows. Estrogen acts to reduce RANK-L, which is an osteoclast-activating cytokine, increase osteoprotegerin, which blocks RANK-L. This in turn inhibits osteoclasts, which slows down bone loss, reducing fracture risk.

MHT is not administered to prevent cardiovascular disease. But due to the cardioprotective factors of estrogen, it can benefit the overall cardiac health. Reducing inflammation in the arteries, increasing HDL, and lowering LDL and promoting heart muscle health are known as the main cardioprotective benefits. However, according to recent studies, MHT had caused an increase of triglycerides and coagulation factors, which promote blood clot formation. Currently, hormone therapy is not approved by the Food and Drug Administration (FDA) to reduce the risk of coronary artery disease or stroke.

Especially within the first year of use of MHT, venous thromboembolism is considered the primary risk. The risk of stroke is increased mainly with a higher dose of oral preparations. The risk of heart attack and coronary heart disease is lower in some younger women, but older women who are above 60 years of age or who are in a late post-menopausal stage may face a higher risk, especially if they are receiving combined oral estrogen and progesterone therapy.