Journal of Clinical Chemistry and Laboratory Medicine

OPEN ACCESS Freely available online

Commentary

Hormone Formulations Used in Clinical Practice

Lisa W. Martin*

Department of Biochemistry, George Washington University, Washington, United states

DESCRIPTION

Currently, a number of FDA-approved hormone therapy options are being used to successfully treat unpleasant symptoms linked with the shifting endogenous hormonal milieu that occurs with menopause in midlife. Different hormone therapy formulations are used depending on the primary indication for treatment, including estrogen-only, progestogen-only, and combined estrogen and progestogen choices. Little is known about how these formulations affect neurobiological processes or their specific pharmacodynamics. Preclinical and clinical findings on the cognitive effects of hormone therapies, such as the negative effects of conjugated equine estrogens and medroxyprogesterone acetate versus naturally circulating 17-estradiol (E2) and progesterone, suggest that more research is needed into the neuro-cognitive impact of hormone therapy formulation. We used a rat model of transitional menopause to give follicle-depleted, middle-aged rats E2, progesterone, levonorgestrel, or combinations of E2 with progesterone or levonorgestrel daily. The researchers looked at spatial memory, anxiety-like behaviors, and depressive-like behaviors, as well as endocrine state and ovarian follicle complement. Divergent memory, anxiety, and depression results, as well as distinct physiological profiles, were shown to be depending on the hormone regimen used. In rats that had undergone experimentally induced transitional menopause and remained ovary-intact, the E2 plus levonorgestrel combination therapy showed the most consistently beneficial profile for the domains investigated. The findings highlight the necessity of looking into differences in hormone formulation and the menopause context in which the medication is given. There has been little research comparing hormone therapy (HT) dosage, regimens, and delivery modalities to cardiovascular disease (CVD) results. This study looked at the effects of different estrogen dosages, administration routes, and HT formulations on the risk of coronary heart disease (CHD), stroke, CVD mortality, total CVD mortality, and all-cause mortality in postmenopausal women. Lower estrogen doses HT could theoretically be safer because to fewer dose-related unfavorable CVD effects. Furthermore, transdermal HT administration avoids "first pass" liver metabolism, which raises serum coagulation factors, lipids, C-reactive protein, and a slew of other variables; it also gives a more physiologic estradiol-to-estrone ratio. Only recently has the health consequences of adding progestogens to combination HT for women with an intact uterus been compared to estrogen-alone in terms of coronary heart disease (CHD), stroke, and other health problems. The WHI estrogen-alone experiment, for example, revealed no increased risk of myocardial infarction. In compared to women on conventional-dose oral CEE, our findings show that CVD risk does not change significantly among women taking alternative estrogen formulations, dosages, or modes of administration. Although most outcomes had similar rates, oral estradiol was linked to a lower risk of stroke, while transdermal HT and low-dose oral CEE were linked to a decreased risk of CHD. The notion that alternate formulations, dosages, and delivery routes may represent a reduced risk of stroke and CHD than conventional-dose oral CEE is a significant idea that needs to be confirmed in more research. In comparison to older women, the absolute risk of CVD and adverse events was substantially lower in younger women. Our findings demonstrate that the dose, formulation, and administration route of HT in women are not associated with significantly different risks of CVD outcomes. However, when compared to conventional-dose oral CEE, transdermal and oral estradiol may be associated with a decreased risk of CHD and stroke, respectively.

Correspondence to: Lisa W. Martin, Department of Biochemistry, George Washington University, Washington, United states; E-mail: martinlisa@gmail.com

Received: May 10, 2021; **Accepted:** May 24, 2021; **Published:** June 01, 2021

Citation: Martin LW (2021) Hormone Formulations Used in Clinical Practice. J Clin Chem Lab Med. 4:174.