

Fellowship Position Paper on Hormone Measurement and Replacement

Use of Estriol

The use of estriol (E3) is very important in hormone replacement. Estriol has a much lesser stimulatory effect on the breast and uterine lining than E1 or E2. E3 does not promote breast cancer. In fact, considerable evidence exists to show that it protects against breast cancer. In Western Europe, E3 has been used for this purpose for many years and is now available as a prescription drug made by a pharmaceutical company.

Estrogen has two main receptor sites that it binds to in the body: estrogen receptor-alpha and estrogen receptor-beta. Estrogen receptor-alpha increases cell growth and estrogen-receptor beta decreases cell growth and helps prevent breast cancer development. E2 equally activates estrogen-receptors alpha and beta. E1 activates estrogen-receptor alpha selectively in a ratio of 5:1. Therefore, E1 prefers to bind with the alpha receptor type, which increases cell proliferation. In contrast, E3 binds preferentially to estrogen-receptor beta in a 3:1 ratio. It is believed that this selective binding to estrogen-beta receptor sites imparts to E3 a potential for breast cancer prevention. E3 is also an adaptogen. When given by itself, E3 does exert strong estrogenic effects. When given in a tenfold amount in relationship to E2, E3 antagonizes the effect of E2 and this antagonistic affect may also decrease the patient's risk of breast cancer.

E3 also has functions in the body besides its affects during pregnancy. They are:

- Benefits the vaginal lining
- Blocks E1 by occupying the estrogen receptor sites
- Controls symptoms of menopause
- Decreases LDL
- Helps reduce pathogenic bacteria
- Helps restore the proper pH of the vagina, which prevents urinary tract infections
- Helps the GI tract maintain a favorable environment for the growth of lactobacilli
- Increases HDL

References:

Head, K., "Estriol: Safety and efficacy," *Altern Med Review* 1998; 3:101-13.

Holtorf, K., "The bio-identical hormone debate: are bio-identical hormones (estradiol, estriol, and progesterone) safer or more efficacious than commonly used synthetic versions in hormone replacement therapy?" *Post Grad Med* 2009; 121: (1):1-13.

Smith, P. *What You Must Know About Women's Hormone*. New York: Square One Publishing, 2009 (in press).

Do you cycle a patient or not after menopause?

If you are using high dose hormonal therapy then you must cycle the patient. High dose hormones are rarely needed. If the patient wants to cycle then of course cycle them. After a year or so on BHRT it is recommended that the patient take a hormonal holiday every month. The easiest way to do this is to have her not take her hormones on Sundays. Then she has 4-5 days a month off of hormones. Or she can take her hormones days 1-24 and then none days 25-28. If her hormones are perfectly balanced then she will not cycle. Some women have symptoms if they are off of their hormones for more than one day. Consequently, having women take their hormones Monday thru Saturday only is the most preferred method of BHRT after the patient has been menopausal for more than one to two years.

Hormones Testing Methods

Salivary testing is the preferred method of hormone testing for both men and women. It is an excellent way to evaluate infertility as well since you can see the hormonal levels over a women's entire 28-day cycle. Salivary testing also measures the amount of free hormones which are the ones that are bioavailable. Another advantage to salivary testing is that it measures hormone levels throughout the entire body and not just what is in the serum of the blood. Furthermore, salivary testing is very important to use after the practitioner has prescribed hormones transdermally since the hormones only stay on the RBC for three seconds. Consequently you cannot easily measure them in the serum. Otherwise it is very easy to overdose a patient.

Twenty-four hour urinary testing of hormonal function is also an accurate method for measuring hormonal levels since it measures the amount of hormones throughout the body just as salivary testing does. Furthermore, urinary testing is able to measure the downstream metabolites of the sex hormones. Likewise, hormonal levels in the urine are reflective of the combination of both endocrine production and peripheral production of the hormones and their metabolites. Urinary hormones are also a good method to look at the catabolic versus the anabolic balance in the body.

References:

See extensive list given in Module I.