Progesterone

Progesterone and Women's Health

By Deborah Mosko-witz, ND

Menopause is not an estrogen -deficiency disease as the media seems to portray it. In fact, if we were to base our understanding of hormones on the media as opposed to the physiology books, we might think the only hormone a man made was testosterone, and the only hormone a woman made was estrogen. Well, it's time to blow the media hormone gig out of the water and see ourselves as we truly are, hormonally.

Men and women both produce estrogen and testosterone, as well as several other hormones that also play important roles in who we are and how we feel. Women however, produce more estrogen, while men produce more testosterone. And then there's progesterone, until now relatively unheard of by the lay public and wholly under-appreciated next to the media-blitzed estrogen.

Progesterone plays an integral part in a woman's life and the life of the human species as well. When progesterone was first discovered by scientists at the turn of the century, it was named after its only known action of that time, "pro" meaning in support of, and "gestation" meaning pregnancy. For years to follow, the only recognized role of progesterone was to support pregnancy.

Progesterone is formed in the body from cholesterol, like all of our steroid hormones. It is made predominantly in the ovary, with small amounts produced by the adrenal cortex and by other tissues, like our nerves. In a woman's body the majority of progesterone is secreted by the corpus luteum, which forms in the ovary following ovulation. For half of each monthly cycle, from ovulation until menses, progesterone is designed to be the dominant hormone. Not only does it ready the environment of the uterus for implantation of the fertilized egg, but it also affects the sperm's ability to reach the egg as well as play a role in a woman's sexual desire at the time of ovulation.

Progesterone and Fertility

Not all women produce sufficient progesterone during the second half of their cycle, leading to symptoms of estrogen dominance, such as bloating, breast tenderness, irritability, PMS mood swings, cravings for sweets, and more. These women may also have difficulty conceiving and maintaining a pregnancy. When a woman becomes pregnant, the placenta, or sac that forms around the fertilized egg, takes over the production of progesterone from the corpus luteum from approximately week 8 -12, producing steadily more progesterone each month. By the time the woman reaches the third trimester, the placenta is producing between 400-600 mg of progesterone each day. This is significantly more than the 20-40 mg produced daily by the corpus luteum from ovulation until menses. Progesterone plays a critical role in fetal development as well as maintaining the pregnancy. Approximately 10-15% of cases of infertility are associated with luteal phase defect, or the condition of too little progesterone during the second half of the menstrual cycle.

PMS and Progesterone

Dr. Katharina Dalton, a British physician, originally coined the term "premenstrual syndrome" (PMS) in 1953 and soon after established the world's first PMS clinic in London. Dalton was one of the first physicians to recognize the pattern of symptoms that occurred for some women one to two weeks before starting their period. Far from being "all in her head," PMS can cause mental, emotional, and/or physical symptoms. PMS may be the result of hormonal changes, inadequate nutrition, lack of exercise, and physical and/or emotional stress.

Twenty to ninety-five percent of women experience premenstrual syndrome, with 10-12% severely affected. Some of the more common symptoms associated with PMS include: mood swings, painful menses, food cravings (esp. salt and sweets), bloating, abdominal swelling, constipation, frequent urination, breast tenderness, backache, forgetfulness, irritability, and migraines.

Many symptoms related to PMS can be attributed to "estrogen dominance," a condition of relative excess estrogen activity in the body. This can be caused by too much estrogen, or by subnormal levels of progesterone in the body.

Researchers over the last forty years have identified four major types of PMS, determined by a woman's predominant symptoms. Some women have only one group of symptoms, while others suffer with a combination of two or more symptom groups. Of the four PMS types, three may benefit from progesterone supplementation. In one study, 75% of women experiencing PMS were shown clinically to have low progesterone levels during the luteal phase of their cycle.

Progesterone has many opposite, balancing activities to those of estrogen. In addition to normalizing both blood sugar levels and water metabolism, progesterone also has a calming effect on the central nervous system. Supplemental progesterone during the luteal phase of the reproductive cycle (days 14-28), has been found to address many of the symptoms listed above.

Progesterone and Menopause

Natural menopause is defined as the cessation of menses as a result of the normal decline in ovarian function. Women may experience a wide range of symptoms in varying degrees of severity, or they may experience no symptoms at all. Some of the signs and symptoms associated with menopause include, but are not limited to: hot flashes, sweating, fatigue, nervousness, irritability, dizziness, numbness, palpitations, insomnia, depression, vaginal dryness and/or pain, nausea, gas, urinary incontinence, pain with urination, constipation, diarrhea, joint pain, and muscle pain. Prior to menopause, as ovarian function wanes, cycles frequently occur where a woman does not ovulate. This period leading up to menopause is referred to as peri-menopause.

Anovulatory cycles that begin in the peri-menopause can lead to hormone changes that may result in hot flashes, changes in bleeding patterns, PMS-type symptoms, as well as many other menopausal symptoms. Progesterone levels fall to near zero levels due to anovulatory cycles, while estrogen levels only decline to about 40-60% of pre-menopausal levels. This precipitous drop in progesterone can lead to an imbalance between estrogen and progesterone, causing a relative "estrogen dominance" within the body. Many women find that supplementing progesterone alleviates many of the menopausal symptoms they are experiencing.

Progesterone has a number of important roles relative to menopause. Progesterone is the natural balancer to estrogen, as well as being necessary for optimum estrogen utilization. The presence of progesterone in the body sensitizes estrogen receptor sites, enabling circulating estrogen to work better. It provides the same function with respect to thyroid hormones as well, allowing thyroid hormones to be better utilized by the body. Biochemically, progesterone is a precursor to other hormones, including estrogens, testosterone, aldosterone, and corticosteroids.

Progesterone Supplementation

Originally, progesterone was only available through suppositories and injections. In 1979, it became available in a cosmetic cream, which allowed for absorption through the skin. Hormones are well tolerated through the skin as is seen with other hormones, such as testosterone, scopolamine, and estrogen. Oral micronized progesterone is also available. Only progesterone creams marketed as cosmetics provide progesterone to women without a prescription. It's important when purchasing a progesterone cream product that progesterone is listed on the label. Many companies today are producing "wild yam" creams that contain a concentrated extract of wild yam, Dioscorea villosa. Wild yam contains substances that can be converted to natural progesterone in a laboratory; however, the body does not have the ability to convert wild yam extract into progesterone. Neither oral nor skin applications of wild yam extract demonstrate any change in progesterone levels in the body.

Keep in mind also to supplement progesterone in physiological amount, in other words, approximately 20-40 mgs per day during the second half of the cycle if using for PMS, or from day 8-28 if perimenopausal. For women no longer cycling, it is appropriate to use natural progesterone for three weeks out of each month.

Consulting with a naturally minded physician can often make it easier when managing menopause naturally, however, many women are well able to manage most symptoms on their own.

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Natural Progesterone Beats Out Synthetics

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Tens of millions of women around the world take prescription sex hormones as contraceptives or to deal with menopausal symptoms. The two main types of hormones are progestins and estrogen. Progestins, such as medroxyprogesterone (the prescription drug Provera®), are synthesized versions related to the natural hormone, progesterone. Although they do not have exactly the same chemical structure as the body's natural progesterone, progestins are useful because they can lessen the risk of uterine cancer that results from taking estrogen alone.

Progestins, available by prescription, are heavily advertised to physicians. Not surprisingly, the majority of doctors prefer them. One gynecologist asked me without the slightest hint of irony, "Why would you risk using natural progesterone when you can use the tra-ditional drug?"

Only recently have physicians begun to take an interest in the natural version - available as either an OTC progesterone cream or a prescription pill. These progesterones are often derived from wild yam (Dioscorea villosa) and are identical to the human hormone. An animal study published in Natural Medicine, March 1997, should encourage doctors to take a closer look at the true hormone. Researchers at the Oregon Regional Primate Research Center in Beaverton (part of the Oregon Health Sciences University) found that progestins increased the risk of coronary artery disease—the leading cause of death among middle-aged and older women.

Promising Animal Study

The Oregon researchers found that by giving female rhesus monkeys an intravenous injection of the hormones serotonin and thromboxane Al, they could induce spasms in the animals' coronary arteries. Similar spasms occur in humans, especially among people who have atherosclerosis. A coronary spasm can cause angina attacks, while severe spasms can trigger a heart attack.

After completion of the first round, researchers then repeated the experiment — with a twist. They gave six monkeys estrogen plus natural progesterone. Six others received estrogen plus the synthetic progestin medroxyprogesterone. The result: None of the monkeys taking progesterone suffered coronary artery spasm, whereas all six of the monkeys taking the synthetic hormone did. Therefore, synthetic progestin, but not natural progesterone, blocked the beneficial effects of estrogen. If these results hold true in humans—something that has not yet been determined - women who take synthetic progestin may be putting themselves at risk of heart disease. Any factor that increases this risk, especially a drug, should be a cause of great public concern.

Safety Concerns About Progestins

Human studies are also raising questions about the safety of progestins. The Postmenopausal Estrogen/Progestin Interventions (PEPI) trials showed that estrogen plus synthetic progestin lowered women's desirable HDL cholesterol levels. Women who took estrogen plus natural progesterone maintained higher HDL levels.

It's time to debunk the assumption that progestins and natural progesterone are bio logically the same — they definitely are not. Like its synthetic version, natural progesterone appears to reverse the harmful effects of unopposed estrogen (shown to increase uterine cancer risk). However, according to these recent studies, synthetic progestins present potentially greater health risks.

Are they worth it?

he study authors say no. "Reasons for choosing MPA. (synthetic progestin) over progesterone as a component of hormone replacement therapy have been based on familiarity and convenience," they write. "Based on the results presented here, formulations of natural progesterone would appear to offer the wiser alternative."

Now, let's reverse the gynecologist's question: All else being equal, why would anyone choose to take an imitation hormone when the body's own version is available?

Here's one reason: Patients and doctors require convincing, which entails lots of studies on the subject. Progesterone cannot he patented, so major drug manufacturers have avoided straight comparison studies that would pit it against their progestin products. I vote for FDA to support research that compares the health effects of both progesterone and progestins. Then we might ask the next logical question: Does either have the ability to lower the risk of breast cancer?

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