longer being naturally produced during and after menopause. If a woman no longer has a uterus, her own estrogen is replaced because there is no buildup of the lining of the uterus. If the woman still has a uterus, estrogen is usually combined with a progestin in this therapy, so the endometrial lining is shed in the same way it would be in the presence of natural hormones. If estrogen is taken without the addition of progesterone in these women, the risk for endometrial cancer is higher. Estrogen therapy is taken as a pill such as Estrace or Premarin, a cream such as Estrace or Dienestrol, or a patch such as Estraderm, Alora, or Vivelle. Combination estrogen-progesterone therapy is prescribed as an oral pill (Prempro) or a patch (Climara-Pro).

Women also produce small amounts of testosterone, and when these levels begin to decline, replacing testosterone may help relieve the symptoms of menopause, such as hot flashes and vaginal dryness. A combination of estrogen and testosterone is administered as a tablet in medications such as Covaryx and Estratest. HRT has been shown to decrease bone loss and cardiovascular dysfunction. However, studies have shown that using HRT increases the risk for breast cancer, stroke, and blood clots. Therefore, HRT is an individual decision. If a woman does not elect HRT, alternative treatments to relieve menopausal symptoms should be discussed, and treatment should be reevaluated on an annual basis.

HRT can also be used to treat prostate cancer in men because estrogen decreases testosterone levels. In addition, men are believed to endure their own form of menopause in which their testosterone levels diminish. Studies are showing a possible decrease in heart disease, diabetes, and death when androgen replacement therapy is administered. The most common method of administering the androgen testosterone in these patients is through a gel (AndroGel) that is rubbed into the skin on a daily basis.

Medications for Abnormal Uterine Bleeding

Abnormal uterine bleeding is a condition in which vaginal bleeding occurs irregularly or too heavily. Correcting the hormonal imbalance that typically causes this condition is often indicated. Combination therapy of estrogen and progesterone, as oral contraceptives, can be prescribed. Progestins (progesterone) alone can also be prescribed to regulate the rhythm and amount of menstruation.

The medications leuprolide (Eligard, Lupron) and goserelin (Zoladex) are gonadotropin-releasing hormone agonists. They are frequently used to suppress buildup of the endometrial lining in patients with endometriosis by reducing estrogen levels in women and thus creating an artificial menopause-like condition that allows the endometrial lining to heal. These medications are injected approximately once a month; treatment is short term, lasting no more than 6 months. In some patients, the side effects are temporary; in others, long-term side effects last 6 months to longer than 5 years. Because of this risk for long-term, sometimes serious side effects, the benefits versus risks must be carefully evaluated. Side effects mimic those of menopause: hot flashes, bone loss, lack of menstrual periods, mood swings, insomnia, headaches, vaginal dryness, and increased cholesterol levels.

LABOR MEDICATIONS

Labor needs to occur when the baby is fully developed and able to survive outside the mother's womb. Unfortunately, because of unforeseen circumstances, the baby may be in danger of being born too early to survive. In other cases, the baby does not seem in any hurry to be born but is developmentally ready. In these instances, medications used for labor include those to hasten labor, which include cervical ripening agents and oxytocin, and those to slow or stop labor, such as tocolytics.

Cervical ripening agents are those that are applied topically to the cervix of the uterus to prepare it for labor. The agents soften the cervix in the hopes of initiating dilation. Dinoprostone (Cervidil, Prepidil) is a prostaglandin used for cervical ripening. The gel form is inserted into the cervix; the vaginal insert is placed in the posterior fornix of the vagina. The cervix is then allowed time to soften gently. If labor does not begin in approximately 6 hours, a second dose may be administered, or the patient may be started on oxytocin (Pitocin, Syntocinon), which is the pituitary hormone that causes the uterus to contract. Both medications should not be used simultaneously because this may cause a much stronger effect than with either drug alone. If labor fails to progress, synthetic oxytocin (Pitocin) can be given by the intravenous (IV) route over time to encourage the uterus gently to contract (however, women in labor may argue that there is nothing gentle about this drug) (Fig. 20-2). This medication is administered only in a controlled setting in which the mother is closely monitored for complications such as developing hypertension. It may also be given after the baby is born to contract the uterus and thus help control postpartum bleeding.