



Continuing Education



Focus on women's health: Common issues in women's health

Learning Objectives

Define contraception and describe available methods of contraception and alternatives to surgical abortion.

Define infertility and describe its causes and treatment options.

Identify common gynecologic disorders.

Define menopause and osteoporosis and discuss treatment options for osteoporosis.

Describe how hormone therapy may be used to treat postmenopausal symptoms.

This first article in a three-part series discusses common issues in women's health. Topics include available methods of contraception, causes and treatments for infertility, common gynecologic disorders, osteoporosis and its treatment options, and how hormone therapy may be used to treat menopausal symptoms.

Wendy Simons Klein, MD, FACP, associate professor of internal medicine and obstetrics & gynecology, senior deputy director, VCU Institute of Women's Health, deputy editor, *Journal of Women's Health*, Virginia Commonwealth University School of Medicine, Richmond, VA, and Brigitte L. Sicat, PharmD, CDE, BCPS, assistant professor of pharmacy, Virginia Commonwealth University School of Pharmacy, Richmond, VA, served as consultants for this article for the Certified Medical Representatives Institute Inc.

For many years, no clear differentiation was made between issues of health for men and women. However, a number of factors have emerged to focus the health-care community on women's health issues such as contraception, infertility, gynecologic problems, osteoporosis and hormone therapy.

Contraception

Contraception is the prevention of fertilization and/or implantation of a fertilized ovum in the uterus. While the use of contraception is pervasive, there is no ideal method. The goal in contraception is to have a wide variety of options to meet individual women's needs.

Available methods of reversible contraception include the following:

- *Natural family planning* involves periodic abstinence from intercourse during fertile periods of the menstrual cycle. No adverse effects are associated with this method, but it is contraindicated in women with irregular menstrual periods.

- *Barrier methods* (such as condoms, diaphragms and cervical caps) prevent sperm from reaching the ova and provide some protection against sexually transmitted diseases.
- *Chemical methods* (for example, spermicidal creams, jellies, foams and the vaginal sponge) kill sperm.
- *Hormonal methods* include oral contraceptives, depo-medroxyprogesterone (DMPA) injections (given every 12 weeks), and contraceptive implants that act to suppress ovulation. Other modes of hormonal contraception include:
 - A transdermal estrogen/progestin contraceptive patch, changed weekly.
 - A soft, flexible polymer ring impregnated with hormones, changed monthly.
 - A monthly injectable estrogen/progestin contraceptive.
- *Intrauterine devices (IUDs)* include:
 - Copper-covered wire inserted into uterus (Copper T380A).
 - T-shaped IUD that releases small amounts of progestin and provides intrauterine contraception for up to five years.

RECEIVE CREDIT AND RECOGNITION

Continuing Education in Pharmaceutical Representative aims to provide reps with information to help them meet the needs of the people they serve and to contribute to reps' personal and professional development. Every third issue includes a self-assessment quiz covering the previous three Continuing Education articles. The quiz for this article will appear in the September issue. Reps who correctly complete the quiz and return it to the CMR Institute with a nominal handling fee will receive a completion recognition form showing that they have successfully completed the three-part educational series and earned .25 CEU (2.5 contact hours). The CMR Institute also will send a letter of recognition to reps' managers upon completion of a quarterly series. A Certificate of Achievement will be awarded to any representative who successfully completes four quizzes or has obtained 1.0 CEU.

Note: The Continuing Education quizzes are not part of CMR Institute's certification program and do not count as credits toward the CMR® designation.

About the CMR Institute:

The Certified Medical Representatives Institute is an independent non-profit educational organization established in 1966 to provide a source of professional development and certification for pharmaceutical representatives. The institute provides an up-to-date, approved continuing education curriculum designed to expand and enhance internal company training and development in a cost-effective manner. The curriculum concentrates on providing a general knowledge base and avoids such areas as selling skills and specific product education.

© 2007 The Certified Medical Representatives Institute Inc., Roanoke, VA 24014. All rights reserved. No part of this article may be reproduced by any method or in any form without written permission from the CMR Institute. Reprints of this article are available from the CMR Institute. Request Continuing Education article FW-1.

Pregnancy may sometimes be prevented after intercourse. This can be accomplished by taking high doses of oral contraceptives, namely, combined estrogen-progestin or progestin-only regimens. These regimens are believed to prevent pregnancy by interfering with ovulation or implantation.

Alternatives to surgical abortion include:

- RU-486, or mifepristone, a progesterone receptor antagonist that can be used to induce abortions early in pregnancy (within 49 days or less). It is used as an alternative to surgical abortion, eliminating the risk of complications from anesthesia and surgery. Clinical studies suggest that mifepristone is most effective when administered in conjunction with misoprostol, an oral prostaglandin.
- Methotrexate/misoprostol, a combination of prescription drugs approved to induce abortion before nine weeks gestation. To cause abortion, methotrexate destabilizes the uterine lining, while misoprostol causes uterine contractions that expel the fetus.

Infertility

Infertility is the inability to conceive after 12 months of regular and appropriately timed intercourse without the use of contraception or the inability to carry a pregnancy to live birth. The major causes of infertility in women include:

Uterine disorders, which involve some difficulty in implantation, often due to structural abnormalities such as fibroid tumors (benign masses in the uterine wall).

Cervical disorders, most commonly attributable to hormonal or immunologic problems that make the cervical mucus hostile to sperm.

Tubal disorders, which occur when tubes develop adhesions (scarring) from pelvic inflammatory disease (PID) or endometriosis (both discussed below).

Ovulation disorders, characterized by irregular or absent menstruation and caused by hormonal abnormalities.

Vaginal disorders, often caused by vaginitis.

Nutritional and metabolic disorders, such as thyroid disease diabetes, and severe nutritional disorders such as anorexia nervosa.

Common therapeutic options for infertility in women include:

- *Ovulation induction* – An initial step in the treatment of ovulation disorders may involve therapy with the oral agent clomiphene citrate. This agent stimulates the production of FSH and has been shown to stimulate ovulation in as many as 95 percent of anovulatory women.
- *Intrauterine insemination (IUI)* – The direct placement of sperm into the upper portion of the uterus using a catheter, which allows the sperm to bypass the cervix altogether.
- *Assisted reproductive technology (ART)* – This consists of bringing together the female ova and

Major changes in menopause

Menopause is the cessation of menstruation that typically occurs between ages 42 and 58 years.

- The population of postmenopausal women is increasing; women can expect to live for many years after entering menopause.

Major changes in menopause include:

- Cessation of ovulation and menstruation with an associated drop in estrogen and progesterone levels.
- Changes in estrogen-dependent tissues.
- Vasomotor instability.
- Osteoporosis
- Increased incidence of cardiovascular disease.

male sperm and/or manipulating the resultant embryo. The three most commonly used ART procedures are:

- In vitro fertilization (IVF), which involves fertilizing ova with sperm in the laboratory and then using a catheter to place several embryos into the uterus in the hope that one or more will develop into a viable pregnancy.
- Gamete intrafallopian transfer (GIFT), which uses a catheter to inject harvested ova along with sperm into the fallopian tube.
- Zygote intrafallopian transfer (ZIFT), which fertilizes ova in the laboratory and then transfers the resulting embryos into the fallopian tubes, where they are expected to travel to the uterus for implantation.

Gynecologic disorders

Pelvic inflammatory disease (PID) is a disease of the upper genital tract characterized by an infection of the cells lining the fallopian tubes. It is associated with disease recurrence, pelvic pain, infertility and increased incidence of ectopic pregnancy. Most physicians advocate a need for multiple drug regimens that may require hospitalization in some cases. Failure rates for single drug therapy of 15 percent to 20 percent have been documented and are considered to be unacceptably high. Hospital treatment of PID with parenteral antibiotics is suggested for patients with severe disease, those failing oral therapy, pregnant patients and for some teenagers to ensure compliance.

Endometriosis is a disease in which tissue that normally lines the uterus appears to migrate to other parts of the body, such as the ovaries, where it settles to form an endometrial growth. Endometrial growths respond to hormonal changes of the menstrual cycle by building up and breaking down each month, just as the endometrium does. This can produce a variety of complications, including internal bleeding, chronic pain, formation of scar tissue (adhesions) and infertility. Treatment for endometriosis may include surgery, drug therapy or a combination of both. Women experiencing severe pain or infertility problems often choose to have their adhesions surgically removed, but this does not eliminate the possibility that new growths may develop in the future.

Menstrual disorders are a common reason for seeking medical attention during a woman's reproductive years. The most common menstrual disorders include:

- *Amenorrhea* – absent menstrual periods in a nonpregnant woman; can affect fertility and bone turnover (contributing to risk of osteoporosis). May occur due to low body-fat levels and various hormonal abnormalities.

Article Summary

- **Contraception is the prevention of fertilization and/or implantation of a fertilized ovum in the uterus.**
 - There are many available methods of reversible contraception.
 - Pregnancy may sometimes be prevented after intercourse.
 - There are several alternatives to surgical abortion.
- **Infertility is the inability to conceive after 12 months of regular and appropriately timed intercourse without the use of contraception or the inability to carry a pregnancy to live birth.**
 - There are many causes of infertility.
 - Common therapeutic options for infertility in women include: ovulation induction, hormonal therapy, intrauterine insemination and assisted reproductive technology.
- **Pelvic inflammatory disease, endometriosis and menstrual disorders are common gynecologic disorders.**
- **One of the conditions that often occurs following menopause is osteoporosis, a disease that produces a gradual weakening of the bones.**
 - Risk factors for osteoporosis include estrogen deficiency, age, fair hair and skin, family history and chronic illness.
 - A number of drugs are available to prevent and treat osteoporosis.
- **Hormone therapy (HT) is sometimes used to treat the symptoms of menopause produced by declining levels of estrogen.**
 - It is used short-term to treat menopausal symptoms such as hot flashes, vaginal dryness and insomnia.
 - HT preparations may include estrogen alone or a combination of estrogen and progesterone to reduce the risk of endometrial cancer.

- **Dysmenorrhea** – painful menstrual periods, typically with cramps and spasms in the lower abdomen and back, often accompanied by nausea, diarrhea or constipation. May be caused by excess prostaglandin production or abnormality of reproductive structures, such as endometriosis, pelvic inflammatory disease or ovarian cyst.
- **Menorrhagia** – heavy or excessively prolonged menstrual bleeding that is typically caused by a temporary hormonal imbalance. May occur due to underlying condition such as cervical or endometrial polyps, ectopic pregnancy, lupus or pelvic inflammatory disease.

Osteoporosis

Menopause refers to the cessation of menstruation that typically occurs between ages 42 and 58. One of the conditions that often occurs following menopause is osteoporosis, a disease that produces a gradual weakening of the bones. Bone loss of 3 percent to 5 percent per year is seen in women approaching menopause. Bones weakened by osteoporosis can fracture easily, with vertebral and hip fractures particularly common. Approximately 1.5 million fractures are attributed to osteoporosis in the United States each year, with a cost of nearly \$17 billion. Vertebral fractures can contribute to stooped posture, chronic pain and compression of the lungs and stomach. Hip fractures are particularly serious, since 24 percent of those who suffer this injury die within a year.

Risk factors for osteoporosis include estrogen deficiency, age, fair hair and skin, thin build, low bone mass, family history, early menopause, chronic illness, corticosteroid use, smoking or alcohol use, excessive caffeine intake, inadequate exercise and inadequate calcium intake. Osteoporosis can be evaluated via bone density measurement in a variety of

locations using a variety of methods; evaluation is recommended every two years for all women over 65 years.

A number of drugs are available to prevent and treat osteoporosis, including selective estrogen receptor modulators (SERMs), calcitonin, as well as the bisphosphonates alendronate, risedronate and ibandronate. All these agents should be taken in conjunction with adequate daily amounts of calcium and vitamin D. It is also recommended that women practice daily weight-bearing exercise.

Teriparatide is a recombinant human parathyroid hormone that is approved for the treatment of postmenopausal women who are at high risk for having a fracture. In addition, the investigational drug strontium ranelate has been shown to decrease bone resorption and stimulate bone formation, reducing the incidence of vertebral fractures and possibly hip fractures.

Hormone therapy

Hormone therapy (HT) is sometimes used to treat the symptoms of menopause produced by declining levels of estrogen. HT preparations may include estrogen alone or a combination of estrogen and progesterone to reduce the risk of endometrial cancer.

HT is used short-term to treat menopausal symptoms such as hot flashes, vaginal dryness and insomnia. HT has also been shown to reduce the risk for postmenopausal bone fractures. However, given the risks now associated with HT, therapy with bisphosphonates (such as risedronate or alendronate), SERMs (such as raloxifene) or calcitonin should be first-line therapy in the treatment of osteoporosis.

HT may be associated with an increased risk for some cancers, especially breast cancer. Some evidence links this increased risk to factors associated with reproductive history, including greater estrogen exposure and use of exogenous estrogen combined with progestin. The relationship between HT and dementia has also been examined. One study demonstrated that HT does not prevent dementia in postmenopausal women and may, in fact, increase the risk.

Based on early observational studies, HT was believed to be cardioprotective, but recent clinical data have invalidated this finding. At present, women and their physicians are instructed to weigh the benefits and risk associated with HT against their particular medical background to determine if this is an appropriate therapeutic approach.

Phytoestrogens (estrogen-like molecules that are found in plants) such as soy beans, flax seeds, nuts, cereals, and some fruits and herbs such as black cohosh and red clover may have benefits similar to those seen with estrogen. While data are limited, it appears that the benefits of including phytoestrogen-containing foods into the diet outweigh any negative effects.

The next article will focus on women's issues in cardiovascular disease and oncology.