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Base your family planning practice on evidence-based medicine in 2010

Use U.S. Medical Eligibility Criteria for Contraceptive Use for guidance

Strive to keep your practice up-to-date in 2010 with the publication of the U.S. Medical Eligibility Criteria for Contraceptive Use.[1]

Just released in late May 2010, the publication provides guidance on whether women and men with particular medical conditions or physical characteristics can safely use certain methods of contraception. The guidance is based upon the World Health Organization's (WHO) Medical Eligibility Criteria for Contraceptive Use, used by reproductive health clinicians around the world.[2] *(*Contraceptive Technology Update *reported on the global criteria in the article, "Update your practice: Check new WHO Medical Eligibility Criteria," June 2004, p. 62.)*

The recommendations have been published in the Centers for Disease Control and Prevention's (CDC) MMWR Recommendations and Reports and are available for free on the publication's web site (www.cdc.gov/mmwr). A related CDC web site (www.cdc.gov/reproductivehealth/

EXECUTIVE SUMMARY

The U.S. Medical Eligibility Criteria for Contraceptive Use, released in late May 2010, provides guidance on whether women and men with particular medical conditions or physical characteristics can safely use certain methods of contraception.

- The guidance is based upon the World Health Organization's (WHO) Medical Eligibility Criteria for Contraceptive Use, used by reproductive health clinicians around the world.
- In addition to the medical conditions included in the WHO guidance, the U.S. recommendations also address additional medical conditions that might be present in American women, such as rheumatoid arthritis, endometrial hyperplasia, inflammatory bowel disease (IBD), bariatric surgery, solid organ transplantation, and peripartum cardiomyopathy.

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UnintendedPregnancy/USMEC.htm) will provide updates and supporting information to clinicians as needed.

Over time, the agency plans to add other formats, such as those accessible by personal digital assistants, as well as offer job aids and tools for family planning providers, says **Kathryn Curtis**, PhD, a health scientist in the Women's Health and Fertility Branch of the Division of Reproductive Health at CDC, and a co-author of the U.S. guidance. The CDC is working with many partners who provide family planning services or who represent family planning providers to disseminate and implement the new guidance, states Curtis.

In determining the scope of the adaptation of the WHO material for use in the United States, those involved in the U.S. publication identified several medical conditions that are not included in the WHO criteria, but for which U.S. providers are seeking guidance, says Curtis. "We conducted systematic reviews of the evidence regarding the safety of contraceptive method use among women with these conditions, and this evidence was considered during the process of adapting the WHO guidance for the U.S.," she explains.

The U.S. guidance uses similar categories of medical eligibility criteria for contraception use as outlined in the WHO publication:

- 1 = A condition for which there is no restriction for the use of the contraceptive method
- 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks.
- 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method.
- 4 = A condition that represents an unacceptable health risk if the contraceptive method is used.[1]

Note the differences

Most of the CDC recommendations do not differ from WHO guidance and cover more than 60 characteristics or medical conditions, observes **Andrew Kaunitz**, MD, professor and associate chair in the Obstetrics and Gynecology at the University of Florida College of Medicine — Jacksonville. However, some WHO recommendations were modified for use in the United States, notes Kaunitz, who served as an invited participant in the development of the U.S. publication.

The recommendations for progestin-only methods for women with a history of deep venous thrombosis (DVT) and/or pulmonary embolism (PE) are the same in the WHO and the United States Medical Eligibility Criteria (US MEC), and they are all "2s" for progestin-only methods, consistent with American Congress of Obstetricians

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and Gynecologists guidelines. One area in which the CDC guidance contrasts with that of the WHO is in women with acute (recent history of) DVT and/or PE, says Kaunitz. CDC's guidelines state it is appropriate to use progestin-only methods, including minipills, DMPA (depot medroxyprogesterone acetate) injections, the progestin-only implant, as well as the levonorgestrel intrauterine device, in such women. The U.S. recommendations give use of such methods in this condition as a "2," while the WHO guidance ranks such use as "3."

"It's worth pointing out that package labeling for DMPA and the implant inappropriately list a history of DVT as contraindication to use," notes Kaunitz.

Kaunitz says it is not unusual in his practice to see patients with a history of DVT who are referred for contraception. If such women choose injectable or implantable contraception, he says he makes sure they are aware that this choice is consistent with the available evidence, but not with package labeling.

Other notable recommendations from the U.S. Medical Eligibility Criteria concern use of progestin-only methods shortly after childbirth in nursing mothers, says Kaunitz. In contrast to the WHO, the CDC guidance states it is appropriate to initiate progestin-only contraceptives less than one month postpartum in nursing mothers.[3]

Check added conditions

In addition to the medical conditions that are included in the WHO guidance, the U.S. recommendations also address additional medical conditions that might be present in American women. Examples of additional conditions in the U.S. guidance include rheumatoid arthritis, endometrial hyperplasia, inflammatory bowel disease (IBD), bariatric surgery, solid organ transplantation, and peripartum cardiomyopathy.

Curtis gave an overview of recommendations for such added conditions during her presentation at the 2010 Contraceptive Technology conference.[4] She used the following hypothetical situation to illustrate the new guidance's use: A 25-year-old female with Crohn's disease desires contraception. She previously used combined oral contraceptives and desires to restart. Is this method safe for her?

With inflammatory bowel disease, risks include relapse; thrombosis (some studies show increased risk, while others do not); malabsorption; osteoporosis; and osteopenia. All such risks might be of concern for contraceptive use, Curtis noted. Experts reviewed 10 studies, which looked at relapse rates, exacerbation, and absorption in women with IBD. Gaps in knowledge include the small total number of pertinent studies, the dearth of studies examining thrombosis risk in women with IBD using hormonal contraceptives, the lack of studies including women with IBD looking at DMPA use and risk of bone loss/fracture, and the fact that available pharmacokinetic studies only looked at women with ulcerative colitis, which affects the large bowel.

With these elements in mind, the guidance notes that for women with mild IBD with no other risk factors for VTE, the benefits of combined oral contraceptive pills, patch, and ring general outweigh the risks, yielding a "Category 2" rating. However, for women with IBD with increased risk for VTE, such as those with active or extensive disease, surgery, immobilization, corticosteroid use, vitamin deficiencies, or fluid depletion, the risks of using the combined pill, patch, or ring generally outweigh the benefits, yielding a "Category 3" rating.[4]

Use clinical judgment

Based on scientific evidence and expert opinion, women of reproductive age with chronic diseases and other medical conditions can safely use most methods of contraception, says Curtis. The U.S. guidance helps provide a framework for these women to work with their health care provider to choose safe and effective contraception.

While safety is an important cornerstone of contraceptive choice, many other factors, such as effectiveness, availability, acceptability, and personal preference, should be considered in determining the most appropriate contraceptive method, the publication states. Clinicians should talk with women and men seeking birth control about the full range of contraceptive options to assess which methods can best meet their needs and provide optimal protection from unplanned pregnancy.

"This is an excellent source of clinical guidance; however, as always, health care providers should consider the individual clinical circumstances of each person to find an appropriate contraceptive method," states Curtis.

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What's on the horizon in male contraception?

For 50 years, women have had a reliable form of birth control in the form of the combined oral contraceptive pill. What has emerged in the same time period for men?

While no method has moved from the laboratory bench to the retail shelf, tangible possibilities are coming closer into view, says **Elaine Lissner**, director of the Male Contraception Information Project based in San Francisco. One such potential method is ultrasound. Scientists at the University of North Carolina at Chapel Hill (UNC-CH) have received a $100,000 grant from the Bill & Melinda Gates Foundation of Seattle to examine it as a long-term, reversible contraceptive.

EXECUTIVE SUMMARY

While no method has moved from the laboratory bench to the retail shelf, tangible possibilities are coming closer into view in the field of male contraception.

- Scientists at the University of North Carolina at Chapel Hill are looking at ultrasound use as a long-term, reversible contraceptive in males.
- The RISUG (Reversible Inhibition of Sperm Under Guidance) method relies on the injection of a polymer gel, composed of powdered styrene maleic anhydride combined with dimethyl sulfoxide, into the vas deferens. The gel coats the inside walls of the vas deferens and kills sperm. If restoration of fertility is desired, the polymer is flushed out of the vas deferens with an injection of dimethyl sulfoxide.

James Tsuruta, PhD, assistant professor in the Laboratories for Reproductive Biology in UNC-CH's Department of Pediatrics, and Paul Dayton, PhD, associate professor and director of graduate studies in the Department of Biomedical Engineering, jointly housed at UNC-CH and N.C. State University in Raleigh, are conducting the ultrasound research. They are moving forward on findings yielded from research conducted by UNC-CH, Family Health International of Research Triangle Park, NC, and funded by the Stanford, CA-based Parsemus Foundation.

Ultrasound has been previously eyed as a potential contraceptive. The late Mostafa Fahim, PhD, former director of the Center for Reproductive Science and Technology at the University of Missouri — Columbia was the first to investigate ultrasound, used by physical therapists to treat injuries. Fahim found that with 10-15 minutes of ultrasound application to the testes, animals from rats to rabbits to monkeys, cats, and dogs would have six months of contraception.[1] Fahim also studied use of ultrasound in men in a small study; however, his findings were not advanced until recently. Italian researchers have published research showing ultrasound is an effective contraceptive in male dogs.[2]

In their pilot study, Tsurata and Dayton attempted to replicate Fahim's findings that ultrasound could deplete the testis of developing sperm cells. The scientists were able to use modern-day, commercially available therapeutic ultrasound instruments to deplete the testis of developing sperm cells. While the duo's research was only short-term studies, Fahim's findings indicate the method can provide six months of contraception.

"Fahim used a custom-built ultrasound apparatus," says Tsurata. "We are using commercially available therapeutic ultrasound instruments, so we will have to conduct our own studies on the duration of the effect."

The two scientists are preparing a manuscript to describe their preliminary studies funded by the Parsemus Foundation. The findings indicate that commercially available therapeutic ultrasound instruments can deplete the testis of developing sperm cells, dropping sperm counts in rats to levels that would cause infertility in men.

In their upcoming studies, the two will focus on determining the minimum effective dose of ultrasound that results in reversible contraception in the rat. Once such a dose is identified, they will

begin to test the effect of multiple rounds of using ultrasound, says Tsurata. "We want to be sure that multiple uses of this method do not result in any detrimental, cumulative effects," he says. "By the end of this one-year grant, we should have enough data to determine if it is prudent to pursue the use of ultrasound as a human contraceptive."

RISUG enters U.S. trial

Another potential male contraceptive method, RISUG (Reversible Inhibition of Sperm Under Guidance), might be set for clinical trials in the United States by 2012, says Lissner.

The RISUG method relies on the injection of a polymer gel, composed of powdered styrene maleic anhydride combined with dimethyl sulfoxide, into the vas deferens. The gel coats the inside walls of the vas deferens and kills sperm. If restoration of fertility is desired, the polymer is flushed out of the vas deferens with an injection of dimethyl sulfoxide. RISUG is similar to vasectomy but with one significant advantage: It is reversible. *(*Contraceptive Technology Update *reported on the potential method. See "Male contraceptive options in the pipeline," August 2006, p. 91.)*

RISUG's final clinical trial in India is slowly but steadily enrolling men, says Lissner. In early 2010, the Parsemus Foundation licensed the rights to begin developing RISUG for use outside India. With this impetus in place, the goals and timeline for RISUG development in the United States are in place, says Lissner. Final decisions on the manufacturer to make RISUG are being made, with a few months devoted to ensuring that the manufactured material is equivalent to that used in the Indian trial. An abbreviated preclinical efficacy study is eyed for mid-2011. If all goes well with these preliminary steps, within 2012, there could be clinical trials of RISUG for U.S. men.

"We've crossed the line where we've moved from the eternal 5-10 years" for a male method, says Lissner. "When you hear someone say "4-5 years," that is a world of difference; that means something is really happening."

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Advocates up awareness for female condom use

Heads up for reproductive health and family planning clinics in California and Nevada: The Female Health Co.'s free FC2 Female Condom — Experience Program is headed your way. Deadline for applications from clinics in the two states is Aug. 31, 2010, says **Rebecca Kizaric**, training manager for the Chicago-based company. *(See resource box, p. 90.)*

Since the non-latex FC2 condom was introduced in the United States in October 2009, the company has provided training and FC2 condoms to organizations in New York, Washington, DC, and Illinois in its efforts to broaden awareness and access across different regions of the United States. *(*Contraceptive Technology Update *reported on the product rollout. See "Condom wrap-up — New options for women and men," December 2009, p. 140.)* The company is reviewing program applications for North Carolina, South Carolina, Georgia, Alabama, and Tennessee, which were submitted prior to the May 30 deadline for those states, says Kizaric. Once organizations are selected, distribution and training will begin in these areas, she states.

The program allows organizations to receive an allocated amount of FC2 Female Condoms for distribution to their clients, free of charge. It is designed to promote the proper use of the FC2 Female Condom, as well as to receive feedback from organizations involved. Such feedback will help shape future distribution programs and train-

EXECUTIVE SUMMARY

The Female Health Co.'s free FC2 Female Condom — Experience Program is providing training and FC2 condoms to organizations in different regions of the United States. The program allows organizations to receive an allocated amount of FC2 Female Condoms for distribution to their clients, free of charge. Deadline for applications from clinics in health and family planning clinics in California and Nevada is Aug. 31, 2010.

- The FC2 condom is available for purchase online. A retail pilot study is under way in Washington, DC.
- Women around the globe are becoming more aware of the FC2 condom. The company shipped 3.5 million FC2 female condoms for distribution during the 2010 World Cup.

ing with respect to the use of the product, according to the company.

There are no fees incurred by the participating organizations, says Kizaric. Organizations that are chosen to participate in the program will receive an intensive FC2 Female Condom Training for their facility and a monthly supply of FC2 for an introductory period. At the end of each month, the organization will be required to fill in a monthly reporting form. FC2 quantities for each month are determined on a case-by-case basis based on a facility's client base, she notes.

Where to get condoms?

Are the FC2 condoms in retail distribution in the United States? According to Kizaric, the condoms are available for retail purchase online at sites such as Undercover Condoms (www.undercovercondoms.com) and Condom Country (www.condom.com).

As part of a retail pilot study, FC2 female condoms also are available in CVS stores across the Washington, DC, area, says Kizaric. The public/private partnership was launched in March 2010 and includes the MAC AIDS Fund of New York City; CVS Pharmacy of Woonsocket, RI; Washington AIDS Partnership and the DC Department of Health, both in Washington, DC; and the Female Health Co. Backed by a $500,000 grant from the MAC AIDS Fund, five local nonprofit organizations (Calvary Healthcare, Community Education Group, Our Place DC, Planned Parenthood of Metropolitan Washington, and the Women's Collective) are distributing 500,000 female condoms through a grassroots prevention and education program in city neighborhoods hardest hit by HIV/AIDS. The condoms also are available for widespread purchase at 56 CVS pharmacy stores in the District.

"As the FC2 launch moves across the country, inquiries on where the public can purchase FC2 have increased dramatically," says Kizaric. "With the lower retail cost, expanding provider education/ training programs and acceptance of the new FC2, online retailers have reported a boost in interest for female condoms from consumers."

Cost for the FC2 condom is lower than the original FC1 condom. According to the company's web site, the maximum price to purchase the FC2 condoms from the company's two distributors — Total Access Group in Santa Ana, CA, and Global Protection Corp. in Boston — is $0.82 per unit regardless of quantity, about a 30% decrease from the FC1's original price.

Global awareness rises

Women around the globe are becoming familiar with the FC2 condom, thanks to heightened visibility of the product. The company shipped 3.5 million FC2 female condoms for distribution during the 2010 World Cup, held in the Republic of South Africa during June and July.

Advocates are pushing for increased funding and policy support for female condoms. A May 2010 Congressional briefing on female condoms focused on the subject, reports Kimberly Whipkey, senior associate for advocacy and outreach at the Washington, DC-based Center for Health And Gender Equity (CHANGE). The event was organized by CHANGE in cooperation with Rep. Barbara Lee (D-CA) and was co-sponsored by CHANGE, the Joint United Nations Programme on HIV/AIDS (UNAIDS), the Universal Access to Female Condoms Joint Programme, and the Embassy of the Royal Kingdom of the Netherlands.

Findings from the brief indicate an upward trend in the numbers of female condoms being shipped overseas, says Whipkey. For example, 2009 was the first year that Malawi received financial support for female condom commodities, says Whipkey. The United States shipped some 1.5 million female condoms in 2009 and is set to distribute 3.5 million in 2010, she reports.

Advocates are looking for support for educational efforts to accompany the increase in female condom shipments, says Whipkey. While the distribution of condoms is important, programs are needed to educate women and men on how to use the products, she notes. ■

SOURCE/RESOURCE

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To download an application form for the FC2 Female Condom — Experience Program, go the FC2 web site, www.fc2.us.com. Select "Health Professionals," then "FC2 Experience Program."

New tool for screening ovarian cancer in focus

Clinicians face challenges when it comes to detecting ovarian cancer: 70% of women with ovarian cancer are diagnosed with advanced disease.[1] New research indicates that a potential screening strategy developed for post-menopausal women at average risk might be of benefit.[2] The data was released prior to the Alexandria, VA-based American Society of Clinical Oncology's June 2010 annual clinical conference.

Scientists are now focusing on CA-125, the protein which has been used for many years to predict ovarian cancer recurrence. The strategy being researched uses a mathematical model that combines trends in CA-125 blood test results and a patient's age, followed by transvaginal ultrasound and referral to a gynecologic oncologist, if necessary. Data indicates this approach is feasible and produces few false-positive results.[2]

There has been a lot of excitement generated over new markers and technologies in ovarian cancer over the last 10 years, according to **Karen Lu**, MD, professor in The University of Texas MD Anderson Cancer Center's Department of Gynecologic Oncology in Houston,.

"I and other scientists in the gynecologic oncology community thought we would ultimately find a better marker than CA-125 for the early detection of the disease," says Lu, the current trial's principal investigator. "After looking at new markers and testing them head-to-head in strong, scientific studies, we found no marker better than CA-125."

Algorithm is key tool

A CA-125 blood test serves as a good indicator of an ovarian tumor's response to treatment after surgery or during chemotherapy. However, when it has been eyed for early disease detection, the marker can become elevated for reasons other than ovarian cancer, which leads to false positives.

Steven Skates, PhD, associate professor in the Department of Medicine at Harvard Medical School and associate in Biostatistics (Medicine) at the Cancer Center at Massachusetts General Hospital, both in Boston, developed the algorithm used in research for predicting the risk of ovarian cancer. The algorithm, known as Risk of Ovarian Cancer Algorithm (ROCA), is a mathematical model based on the patient's age and CA-125 score.[3] In addition to serving as investigator on the U.S. trial, Skates and research partners are using the ROCA algorithm in a large-scale trial in the United Kingdom. The results from the overseas trial, which includes over 200,000 women, should be known by 2015.

EXECUTIVE SUMMARY

New research indicates that a potential screening strategy developed for post-menopausal women at average risk for ovarian cancer might be of benefit.

- Scientists are now focusing on CA-125, the protein that has been used for many years to predict ovarian cancer recurrence. The strategy being researched uses a mathematical model that combines trends in CA-125 blood test results and a patient's age, followed by transvaginal ultrasound and referral to a gynecologic oncologist, if necessary. Data indicates this approach is feasible and produces few false-positive results.
- The mathematical model is the focus of a large-scale trial in the United Kingdom. Results of the trial, which includes more than 200,000 women, should be known by 2015.

Look at the research

For the prospective, single-arm U.S. study, 3,252 women were enrolled from seven sites across the country. All were healthy, post-menopausal women, ages 50-74, with no strong family history of breast or ovarian cancer. The study's primary endpoint was specificity; in addition, the study looked at the positive predictive value (the number of operations required to detect a case of ovarian cancer).

Scientists administered a baseline CA-125 blood-test to each woman. Using the ROCA tool, women were assigned to one of three risks groups, with the respective follow-up. Women in the "low" group returned in a year for a follow-up blood test, with those in the "intermediate" group receiving further monitoring with repeat CA-125 blood test in three months. Women assigned to the "high" category were referred to receive transvaginal sonography (TVS) and to see a gynecologic oncologist.

Based on the women's CA-125 change over time, the average annual rate of referral to the intermediate and high groups were 6.8% and .9%, respectively. Cumulatively, 85 women (2.6%) were

determined to be high risk, and thereby received the TVS and were referred to a gynecologic oncologist. Of those women, eight underwent surgery: five were found to have ovarian cancer, three with invasive and two with borderline disease; three had benign tumors, for a positive predictive value of 37.5%. The screening failed to detect two borderline ovarian cancers.

The three invasive ovarian cancers detected in the study were high-grade epithelial tumors, the most aggressive form of the disease, and were caught in their early stages, when the disease is not only treatable, but most often curable. The study findings provide early evidence that ROCA followed by TVS is a feasible strategy for screening women over 50 years old, researchers conclude.[2]

While encouraging, the findings are neither definitive, nor immediately practice-changing, the U.S. researchers emphasize. CA-125 is shed by only 80% of ovarian cancers, says **Robert Bast**, MD, vice president for translational research at MD Anderson and a co-investigator on the U.S. study.

"At present, we are planning a second trial that will evaluate a panel with four blood tests including CA-125 to detect the cancers we may otherwise miss with CA-125 alone," says Bast. "The current strategy is not perfect, but it appears to be a promising first step."

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HIV protection during pregnancy is examined

EXECUTIVE SUMMARY

New data presented at the Microbicides 2010 international conference indicates that men face a doubled risk for HIV if their partner is HIV-infected and pregnant. The new study is the first to show that a man in a relationship with an HIV-positive woman has a greater chance of becoming infected while she is pregnant than when she is not.

- Researchers also reported results of the first clinical trial to evaluate the safety of a vaginal microbicide in pregnant women.
- The study, which involved applying a single dose of tenofovir gel hours before women gave birth by Caesarean section, will help determine whether use of a vaginal microbicide to protect against HIV during pregnancy is safe for women and their babies.
- Results of the trial indicate safety. Larger studies are planned.

Research indicates that women are at risk for heightened HIV infection during pregnancy, but what about their partners?[1] New data presented at the May 2010 Microbicides 2010 international conference indicates that men face a doubled risk for HIV if their partner is HIV-infected and pregnant.[2]

The 2010 meeting represents the sixth biennial gathering of the International Microbicides Conference, which gathers leading investigators, clinicians, policymakers, community advocates, and experts in global health who are working in all facets of HIV prevention and in all parts of the world.

The new study, which involved 3,321 couples in which one partner was HIV-infected and the other not, is the first to show that a man in a relationship with an HIV-positive woman has a greater chance of becoming infected while she is pregnant than when she is not.[2]

Even when researchers accounted for behavioral and other factors that can contribute to HIV risk, the increased risk associated with pregnancy remained for men. Scientists believe that biological changes that occur during pregnancy might make women more infectious than they would be otherwise, says **Nelly Mugo**, MD, MPH, a research scientist affiliated with the University of Nairobi and Kenyatta National Hospital in Nairobi and the University of Washington in Seattle. Mugo presented results of the study, conducted in Botswana, Kenya, Rwanda, South Africa, Tanzania, Uganda, and Zambia, on behalf of the Partners in Prevention HSV/HIV Transmission Study team, based out of the University of Washington's International Clinical Research Center.

To conduct the study, scientists followed for up to two years 1,085 couples in which the male was

infected and 2,236 couples in which the female was infected to understand the different circumstances and determinants that might contribute to HIV risk. During this time, 823 pregnancies took place; 320 were among couples in which the male had HIV and 503 pregnancies among couples in which the female had HIV. In total, 61 women and 58 men became infected with HIV. Of the women, 17 (27.9%) acquired HIV during pregnancy, and 12 (20.7%) of the men became infected when their partner was pregnant.

In performing their analysis, scientists found that pregnancy was associated with increased risk of female-to-male and male-to-female HIV transmission. For women with an HIV- infected partner, the study found that factors other than pregnancy, such as sexual behavior, might have contributed to the increased risk. In men, however, the link between pregnancy and HIV risk was much clearer, even after taking into considering whether the men had engaged in unprotected sex or were circumcised. More research is needed to confirm whether the increased female-to-male transmission of HIV during pregnancy is due to the physiological and immunological changes that occur with pregnancy, the authors conclude.[2]

Gel OK for pregnancy?

Women need a method to protect themselves from HIV/AIDS at all times, including when they are pregnant.

At the May 2010 conference, researchers reported results of the first clinical trial to evaluate the safety of a vaginal microbicide in pregnant women. The study, which involved applying a single dose of tenofovir gel hours before women gave birth by Caesarean section, represents an important first step to determine whether use of a vaginal microbicide to protect against HIV during pregnancy is safe for women and their babies.[3] In its pill form, tenofovir is used in one of the most widely used regimens for treating HIV. Researchers are looking at its use in preventing the disease.

"If a microbicide is found effective for preventing HIV in women, women will need to know whether it is safe for use during pregnancy and would not be harmful to their unborn child," says **Richard Beigi**, MD, MSc, assistant professor of obstetrics, gynecology, and reproductive sciences at the University of Pittsburgh School of Medicine. "We are committed to understanding the answers to these questions, but we must do so in step-wise fashion, with the greatest of care and in the most ethically responsible way possible."

The study was a Phase I study conducted at Magee-Womens Hospital of the University of Pittsburgh Medical Center, and is part of the Microbicide Trials Network, an HIV/AIDS clinical trials network established by the National Institute of Allergy and Infectious Diseases. To conduct the current research, scientists investigated giving a single 40 mg dose of the tenofovir gel to 16 healthy, HIV-uninfected women hours before they gave birth. Researchers looked at how the drug is absorbed during pregnancy and whether it can transfer to the fetus. They found that only small amounts of drug were absorbed into the mother's bloodstream, amniotic fluid, and umbilical cord blood after the gel was topically applied.[3]

What is next in the investigation? Researchers plan to conduct a larger study of tenofovir gel in pregnant and breastfeeding women.

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Updated guidance issued on use of HPV vaccines

Add current data to your clinical knowledge base: the Advisory Committee on Immunization Practices (ACIP) has issued updated recommendations for routine and catch-up vaccination of females with the bivalent or quadrivalent human papillomavirus vaccines (HPV2, HPV4), as well as published its policy statement and summarized background data on use of the HPV4 vaccine in males.[1-2]

There are no major changes in the recommen-

EXECUTIVE SUMMARY

The Advisory Committee on Immunization Practices has issued updated recommendations for routine and catch-up vaccination of females with the bivalent or quadrivalent human papillomavirus (HPV) vaccines, as well as published its policy statement and summarized background data on use of the quadrivalent vaccine in males.

- The Food and Drug Administration approved GlaxoSmithKline's Cervarix bivalent vaccine for use in the prevention of cervical pre-cancers and cervical cancer associated with oncogenic HPV types 16 and 18 for use in girls and young women ages 10-25 in October 2009.
- At the same time, it issued approval of the Merck and Co. quadrivalent vaccine Gardasil for the prevention of genital warts (condyloma acuminata) due to HPV types 6 and 11 in boys and men, ages 9-26.

dations for use of HPV vaccines in females, says **Lauri Markowitz**, MD, medical epidemiologist at the Centers for Disease Control and Prevention. The recommendations now state that either vaccine can be used, she notes.

"The main purpose [of the publication] is to provide some basic information about the bivalent vaccine and to reiterate the recommendations for either vaccine," she states.

The Food and Drug Administration (FDA) approved GlaxoSmithKline's Cervarix bivalent vaccine for use in the prevention of cervical precancers and cervical cancer associated with oncogenic HPV types 16 and 18 for use in girls and young women ages 10-25 in October 2009. At the same time, it issued approval of the Merck and Co. quadrivalent vaccine Gardasil for the prevention of genital warts (condyloma acuminata) due to HPV types 6 and 11 in boys and men, ages 9-26.

Review the guidance

The dosing and administration schedules in females are the same for the HPV4 and HPV2.[1] Each dose is 0.5 ml, administered intramuscularly, preferably in a deltoid muscle. The vaccines are administered in a three-dose schedule, with the second dose administered 1-2 months after the first dose, and the third dose given six months after the first dose.

ACIP recommends routine vaccination of females ages 11 or 12 with three doses of either vaccine; the vaccination series can be started as early as age 9. Recommendations call for vaccination of females ages 13-26 who have not been vaccinated previously or who have not completed the three-dose series. If a female reaches age 26 before the series is complete, remaining doses can be administered after she passes that age. Ideally, vaccine should be administered before potential exposure to HPV through sexual contact, the guidance states.[1]

Whenever feasible, the same HPV vaccine should be used for the entire vaccination series, the publication states. While no studies have addressed interchangeability of HPV vaccines, either HPV vaccine can be used to complete the series to provide protection against HPV 16 and 18 if the vaccine provider does not know or have available the HPV vaccine product previously administered.[1]

Both HPV vaccines are contraindicated for persons with a history of immediate hypersensitivity to any vaccine component. HPV4 is produced in Saccharomyces cerevisiae (baker's yeast), so it should not be used for persons with a history of immediate hypersensitivity to yeast. Prefilled syringes of HPV2 have latex in the rubber stopper and should not be used in persons with anaphylactic latex allergy; HPV2 single dose vials contain no latex.[1]

Studies suggest that increased fainting occurs among females 13 years and older after receiving any vaccine.[3] To avoid serious injury related to a syncopal episode, vaccine providers should consider observing patients for 15 minutes after they are vaccinated.[1]

Former Argentina President Juan Perón's wife, Eva Perón, died of cervical cancer, and so did Juan Perón's first wife, points out **Robert Hatcher,** MD, MPH, professor of gynecology and obstetrics at Emory University School of Medicine in Atlanta.

"Men infect women with the viruses that cause

COMING IN FUTURE MONTHS

- Get the latest national data on contraceptive use
- Clearance given for at-home male fertility test
- Advocates press for multipurpose prevention technologies
- Can adding more tests increase HIV detection?
- Are clinicians screening for cervical cancer too frequently?

cervical cancer. Cervical cancer is an infectious disease caused by certain types of the human papillomavirus," states Hatcher. "Finally, the guidelines for the use of Gardasil [HPV4] are taking this basic fact of life into consideration."

The new guidance states that the HPV4 vaccine should be administered to males ages 9-26 in a three-dose schedule.[2] The second dose is administered one to two months after the first dose, with the third dose given six months after the first dose. The minimum interval between the first and second dose of vaccine is four weeks, and the minimum interval between the second and third dose is 12 weeks. The minimum interval between the first and third dose is 24 weeks. Doses received after a dosing interval that is shorter than recommended should be readministered, the guidance advises. If the HPV vaccine schedule is interrupted, the vaccine series does not need to be restarted. Males who receive the vaccine also should be observed for 15 minutes after vaccine administration for possible fainting, the guidance states.

How many young women are getting the HPV vaccine? A new report published by researchers at Washington University School of Medicine in St. Louis indicates only about one in three young women has received the shot.[4]

To conduct the study, researchers tracked rates of HPV vaccination in Delaware, New York, Oklahoma, Pennsylvania, Texas, and West Virginia, analyzing data from 1,709 girls in 274 counties. Just 34% of girls ages 13 to 17 were vaccinated in the six states surveyed, data show.[4] Results of the study suggest geographic disparity in HPV vaccination.

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CNE/CME INSTRUCTIONS

Physicians and nurses participate in this continuing nursing medical education/continuing education program by reading the articles, using the provided references for further research, and studying the questions at the end of the issue. Participants should select what they believe to be the correct answers and refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material. After completing this activity with the **December** issue, you must complete the evaluation form provided and return it in the reply envelope provided in that issue to receive a certificate of completion. When your evaluation is received, a certificate will be mailed to you. ■

CNE QUESTIONS

After reading Contraceptive Technology Update, the participant will be able to:

- identify clinical, legal, or scientific issues related to development and provisions of contraceptive technology or other reproductive services;
- describe how those issues affect services and patient care;
- integrate practical solutions to problems and information into daily practices, according to advice from nationally recognized family planning experts;
- provide practical information that is evidence-based to help clinicians deliver contraceptives sensitively and effectively.

5. What category is given by the U.S. Medical Eligibility Criteria for Contraceptive Use for a woman with mild inflammatory bowel disease with no other risk factors for venous thromboembolism who wishes to use combined oral contraceptive pills?
   A. 1 = A condition for which there is no restriction for the use of the contraceptive method.
   B. 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks.
   C. 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method.
   D. 4 = A condition that represents an unacceptable health risk if the contraceptive method is used.

6. What is the active element used in the potential male contraceptive RISUG (Reversible Inhibition of Sperm Under Guidance)?
   A. Ultrasound
   B. Testosterone gel
   C. A polymer gel composed of powdered styrene maleic anhydride and dimethyl sulfoxide
   D. Testosterone enanthate

7. What is the protein being researched by scientists as a potential screening strategy developed for post-menopausal women at average risk for ovarian cancer?
   A. M-CSF
   B. CA 15-3
   C. CA 19-9
   D. CA-125

8. What is the active ingredient in the microbicidal

gel presented at the Microbicides 2010 conference which represents the first clinical trial to evaluate the safety of a vaginal microbicide in pregnant women?
A. Tenofovir
B. Acyclovir
C. Famciclovir
D. Penciclovir

Answers: 5. B 6. C 7. D 8. A

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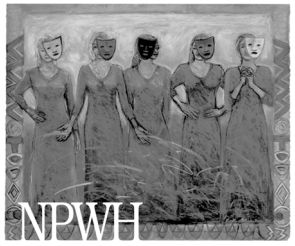
Contraceptive Technology Update is endorsed by the National Association of Nurse Practitioners in Women's Health and the Association of Reproductive Health Professionals as a vital information source for health care professionals.



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