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Interpreting News and Research on Contraceptives and STIs

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Science alert: HIV drug regimen cuts mother-to-infant transmission

Expanding treatment reduces transmission rate by more than 50%

When HIV is not diagnosed until women go into labor, their infants usually are treated soon after birth with the antiretroviral drug zidovudine to prevent infant infection. Findings from a new study indicate that adding one or two drugs to this standard antiretroviral treatment can reduce the chances by more than 50% that an infant will develop an HIV infection.[1]

Family planning clinicians know the risk of HIV infection among their female patient population. In 2009, nearly a quarter of diagnoses of HIV infection in the United States were among women and girls ages 13 years and older, statistics from Centers for Disease Control and Prevention (CDC) show.[2] Additionally, almost 184,000 women and adolescent girls were living with HIV at the end of 2008, the CDC estimates.

The new study was designed to examine the best post-exposure prophylaxis regimen to give to HIV-exposed infants in situations in which mothers received no antiretroviral treatment during pregnancy, says **Karin Nielsen-Saines**, MD, MPH, clinical professor of pediatrics in the Division of Infectious Diseases at the David Geffen School of Medicine at the University of California, Los Angeles. In most cases, HIV diagnosis was made only at the time of admission for labor and delivery, says Nielsen-Saines, who served as lead author of the paper.

To perform the prospective randomized study, investigators enrolled 1,684 evaluable infants in Brazil, South Africa, Argentina, and the United States. All infants were HIV-exposed, formula-fed infants born to mothers not receiving antiretroviral therapy prior to labor. In this specific setting, a two-drug regimen consisting of zidovudine for six weeks and three doses of nevirapine, or a three-drug regimen consisting of zidovudine for six weeks and two weeks of a protease inhibitor and a second nucleoside reverse transcriptase inhibitor, lamivudine-3TC, were better in reducing the risk of transmission during labor and delivery. Results were comparable between the two- and three-drug regimen prophylaxis.

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What led the research team to look at the addition of the particular drugs (nevirapine, lamivudine, and nelfinavir) to the present standard treatment?

Nevirapine was chosen for one arm based on extensive data on its pharmacokinetics and efficacy when used for prophylaxis, according to **Heather Watts**, MD, a medical officer in the Pediatric, Adolescent, and Maternal AIDS Branch in the National Institute of Child Health and Human Development. Nevirapine is rapidly absorbed, providing drug levels quickly in the neonate, explains Watts, a coauthor on the current study. An earlier study showed a 47% reduction in transmission when mothers and infants each received a single dose of nevirapine compared to intrapartum and one week of infant zidovudine in a breastfeeding population.[3] A study in Malawi showed a greater reduction in transmission with the combination of single dose nevirapine and one week of zidovudine (transmission 15.3%) than with nevirapine alone (transmission 20.9%), again in a breastfeeding population.[4]

"The three-dose regimen used in our study provided nevirapine levels for 10-14 days in the infants, the period felt to be necessary to interrupt transmission after potential intrapartum exposure to HIV," says Watts. "Studies in non-breastfed infants have shown that 93% of infant infections can be detected by two weeks of age."

The regimen of zidovudine /3TC/nelfinavir was chosen to provide a highly active regimen with three drugs including a protease inhibitor as is used for therapy in adults and children, says Watts. The three-drug regimen was chosen to provide drugs with activity against two viral enzymes, the reverse transcriptase and protease enzymes, she explains. The two extra drugs were given for two weeks.

Lamivudine or 3TC was chosen because it was the most commonly used second agent with zidovudine in combination regimens and had pharmacokinetic data in infants to allow appropriate dosing, says Watts. Nelfinavir was chosen as the protease inhibitor because there were a limited number of protease inhibitor drugs available when the study was designed in 2002, she states.

EXECUTIVE SUMMARY

Findings from a new study indicate that adding one or two drugs to the standard antiretroviral treatment of zidovudine can reduce the chances by more than 50% that an infant will develop HIV from its infected mother.

- Scientists looked at a two-drug regimen consisting of zidovudine for six weeks and three doses of nevirapine, or a three-drug regimen consisting of zidovudine for six weeks and two weeks of a protease inhibitor and a second nucleoside reverse transcriptase inhibitor, lamivudine-3TC.
- The two- and three-drug regimens were better in reducing the risk of transmission during labor and delivery, findings indicate.

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Editorial Questions

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Nelfinavir was the only drug at the time of study design that had an available formulation (powder to mix with liquids) that could be used in infants and that offered pharmacokinetic data for infants under 3 months of age, says Watts. Even today, the number of protease inhibitors with liquid formulations is limited, and lopinavir/ritonavir is not recommended in newborns because of toxicity, she notes.

The six-week zidovudine regimen was included in all arms since it was the standard of care in the United States and Brazil when the study was designed, says Watts. It remains today as the current standard of care.

Will regimen change?

The current study was restricted to babies who had a high risk of HIV acquisition, says Nielsen-Saines.

The study results are not generalizable to all HIV-exposed infants, only to those born in the special scenario described, she comments. Babies who are born to mothers with a detectable virus load at or close to delivery—even those whose mothers received antiretroviral drugs in pregnancy—also might benefit from the two- or three-drug arm approach, Nielsen-Saines says. Why? Because the infants are also at high risk of HIV acquisition because of the positive maternal virus load. However, for babies who are born to mothers who receive antiretroviral treatment and maintain an undetectable virus load, standard zidovudine prophylaxis for six weeks is still the norm, she states.

"I don't anticipate that this guideline will change anytime soon because investigators are reluctant to conduct a study where zidovudine is not part of the standard prophylactic regimen postpartum," Nielsen-Saines observes. "In our own study, we added drugs to the standard of care (zidovudine), and the zidovudine backbone was not substituted by any other drug."

There is some reluctance to conduct a study in infants where zidovudine, a drug with known post-exposure prophylactic effect, is substituted by a different drug with an unknown or unproven prophylactic effect in infants, Nielsen-Saines says. In the developing world, particularly Sub-Saharan Africa, continuous nevirapine is being used for six weeks postpartum, a practice that addresses the issue of breastfeeding transmission.

"I do not see a push to change to nevirapine prophylaxis in the developed world because that approach has its own set of problems," Nielsen-Saines says. "Therefore, for now, I anticipate we will continue to be delivering zidovudine to infants postpartum, and combination regimens to those whose mothers are at higher risk of HIV transmission, because of absent therapy in pregnancy or failure to respond to therapy."

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Potential spermicide enters advanced trial

Scientists are evaluating an experimental vaginal gel for use as a potential spermicide in a Phase III clinical trial.

Amphora, under development by Evofem of San Diego, is a bioadhesive acid-buffering gel that coats the vaginal wall and cervix. Amphora helps maintain a woman's natural pH level between 3.8 and 4.2. Earlier research findings indicate this level renders sperm immobile and inactivates most sexually transmitted infectious organisms, including gonococci, herpes, chlamydia, HPV, and HIV.[1-4]

Investigators are enrolling women in 32 U.S. clinical sites, says **Krystle Ficco**, a Evofem spokesperson. The multicenter, open-label, randomized, controlled trial will examine use of Amphora gel compared to Ortho Options Conceptrol vaginal gel over seven cycles of use. The study design will allow women using Amphora to continue with study treatment for up to 13 cycles of treatment upon completion of the first seven cycles.

While spermicides do not offer the highest level of contraceptive effectiveness, they do represent an easily accessible, reversible form of birth control that is female-controlled. Among typical couples who initiate use of vaginal spermicides, about 29% will experience an accidental pregnancy in the first year. If vaginal spermicides are used consistently and correctly, about 18% will become pregnant.[5]

How does it work?

Amphora works by two primary mechanisms of action. As a vaginal pH buffer, it enhances the vagina's natural defenses by maintaining normal acidic pH during the introduction of semen (an alkaline substance) during intercourse. As a bioadhesive barrier, the chemical agent forms a protective physical barrier over the cervix and vaginal walls. Sperm and microbes are unable to penetrate the vaginal wall and cervix due to Amphora's ability to create a protective, long-lasting coating over the vaginal surface.

Originally developed by the Topical Prevention of Conception and Disease (TOPCAD) Program at Rush–Presbyterian–St. Luke's Medical Center, Chicago, Amphora was licensed to Evofem's former company, Instead, in 2002, with patent protection granted in March 2004. Shortly thereafter, Amphora was granted clearance for use as a personal lubricant by the Food and Drug Administration (FDA). However, it has not yet been marketed as such, says Ficco.

"The approval was a critical milestone in the ongoing evolution of this product, giving us opportunities to work with the FDA and opening up more doors for clinical study," Ficco states.

EXECUTIVE SUMMARY

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- Amphora helps maintain a woman's natural pH level between 3.8 and 4.2. Research findings indicate this level renders sperm immobile and inactivates most sexually transmitted infectious organisms.
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Alternative to N-9?

Scientists are looking for alternatives to nonoxynol-9 (N-9), which is the chemical basis of current spermicides in the United States. Research has shown that frequent use of N-9 can cause genital lesions in the vagina and might increase the risk of HIV transmission.[6] It also has been found to cause damage to the lining of the rectum, providing an entry point for HIV and other sexually transmitted infections (STIs).[7]

According to Centers for Disease Control and Prevention guidelines, spermicides—especially those that contain N-9—should not be used for STI prevention. Furthermore, N-9 lubricants should not be used during anal intercourse.[7]

The impetus for Amphora is to provide a less-irritating spermicide, with its attendant benefits; preliminary results indicate that it might be a good microbicide as well, says **Michael Rosenberg**, MD, MPH, clinical professor of obstetrics and gynecology in the School of Medicine at the University of North Carolina, Chapel Hill.

Rosenberg serves as chief executive officer of Health Decisions, a Chapel Hill, NC research firm that is participating in the Amphora clinical trial.

"I'm always impressed that I've been working on microbicides for more than 15 years, and still all we have is N-9," says Rosenberg. "I don't think N-9 is bad, but I would hope there is something better."

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New data emerges on use of hormone therapy

Since results of the 2002 Women's Health Initiative (WHI) report suggested that use of menopausal hormone therapy increases risk of coronary heart disease,[1] science has examined the timing of therapy initiation on safe use of such treatment. A new report offers reassuring data for hormone therapy use in recently menopausal women.[2]

Using data from the California Teachers Cohort Study, a prospective study of more than 133,000 current and retired female teachers and administrators, the new analysis assesses how age at which hormone therapy is used impacts cardiovascular and overall mortality.

The study results add to the growing evidence that hormone use might have a beneficial effect in younger women but has little cardiovascular benefit in older women, says **Daniel Stram**, PhD, professor in the Department of Preventive Medicine, Keck School of Medicine, at the University of Southern California in Los Angeles. The findings also have direct implications regarding the lack of potential benefits of continued use of hormone therapy for older women who began use close to menopause, he notes.[2]

When it comes to the benefits of hormone therapy on coronary heart disease incidence or mortality, scientists have theorized that it is the time when a woman begins hormone therapy (her age or the time since her menopause) that has led to discrepancies between observational study results and those of randomized trials.[3-4] Reviews of previous data have indicated that any benefit of hormone therapy on cardiovascular disease is restricted to women who started therapy within 10 years of menopause.[5,6] Age at randomization might modify the effect of hormone therapy on risks of overall mortality and coronary heart disease incidence, as seen in the WHI data[3], and women ages 50-59 when randomized to HT had a reduced risk of mortality overall, scientists observe.

EXECUTIVE SUMMARY

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- The study results add to the growing evidence that hormone use might have a beneficial effect in younger women but has little cardiovascular benefit in older women.

Look at the results

To conduct the analysis of data from California Teachers Cohort Study, scientists looked at current and retired female teachers and administrators who returned an initial questionnaire during 1995-1996. Participants then were followed until late 2004 or until death. More than 71,000 participants were eligible for analysis for the current study. Analysis was adjusted for a variety of potential cardiovascular and other confounders.

During follow-up, deaths occurred in 18.3% of never-users of hormone therapy and 17.9% of former users. In contrast, deaths occurred in 6.9% of women taking hormone therapy at the time of the baseline questionnaire.

In the overall analysis, current hormone therapy use was associated with a reduced risk of coronary heart disease mortality (hazard ratio [HR]0.84, 95% confidence interval [CI] 0.74-0.95). The reduction was most notable in the youngest users (ages 36-59, HR 0.38), with a gradual rise as the age of current therapy users increased, reaching a hazard ratio of about 0.9 in current users age 70 and older. The coronary heart disease mortality hazard ratio did not reach or exceed the hazard ratio (1.0) assigned to never-users of any age. In looking at overall mortality, the hazard ratio was 0.54 for the youngest current users, approaching 1.0 in the oldest current users. The associations between overall and coronary heart disease mortality were similar among users of estrogen-only and estrogen-progestin therapy users.[2]

The pendulum continues to swing toward reassurance regarding timing of menopausal hormone therapy and cardiovascular mortality, says **Andrew Kaunitz**, MD, professor of obstetrics and gynecology at the University of Florida College of Medicine in Jacksonville, FL. Age, or time since

menopause, clearly does matter, particularly in regard to coronary heart disease mortality and hormone therapy use, he remarks.

The findings from the current study fall in line with previous reports in women and nonhuman primates that support the safety of hormone therapy when used by recently menopausal woman with bothersome symptoms, Kaunitz says.

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New test approved for trichomonas vaginalis

Trichomoniasis is the most common curable sexually transmitted infection (STI) in young, sexually active women, according to the Centers for Disease Control and Prevention. An estimated 7.4 million new cases occur each year in U.S. women and men.[1]

Results of a just-published study indicate a test just approved by the Food and Drug Administration (FDA) might be more accurate in identifying infection than currently available methods.[2] The study compared the performance of the Aptima transcription-mediated amplification assay against the currently available Affirm assay (Becton, Dickinson and Company, Franklin Lakes, NJ), which is used in obstetric/gynecology practice. The Aptima test is from Gen-Probe of San Diego. The Aptima Trichomonas vaginalis assay received marketing clearance in Europe in 2010.

The Aptima Trichomonas assay uses the same nucleic acid amplification technologies as the Aptima Combo 2 assay, Gen-Probe's chlamydia and gonorrhea test.

To perform the current study, investigators evaluated specimens from 766 patients. Specimens were retrieved consecutively from patients with vaginal complaints and/or with histories suggestive of sexually transmitted infection. Study results indicate the Affirm assay produced false positive and false negative results, while the Aptima assay detected 36% more infected women and yielded a sensitivity of 100% and no false positives.

Investigators also found that trichomonas infection was most prevalent in women ages 36-45 and in women ages 51-60, says **Kimberle Chapin**, MD, director of the microbiology lab at Rhode Island Hospital in Providence and lead author of the study. "While this was definitely surprising and a new finding in these age groups, this data has now also been substantiated in the FDA clinical trial data involving multiple sites in the United States including Rhode Island Hospital," says Chapin. "In the Rhode Island population with a low prevalence of sexually transmitted infections, we found that Trichomonas vaginalis infection was higher than that of chlamydia and gonorrhea, supporting the need for routine testing for [the infection] and suggesting a different reason for why women may be seeing their physicians with certain gynecologic complaints."

EXECUTIVE SUMMARY

Results of a just-published study indicate a test just approved by the Food and Drug Administration might be more accurate in identifying trichomoniasis than currently available methods.

- The study compared the performance of the Aptima transcription-mediated amplification assay against the currently available Affirm assay used in obstetric/gynecology practice. The new test is from Gen-Probe of San Diego.
- Trichomoniasis is the most common curable sexually transmitted infection in young, sexually active women, according to the Centers for Disease Control and Prevention. An estimated 7.4 million new cases occur each year in U.S. women and men.

STI not reported—yet

Chapin has been working with **Jane Schwebke**, MD, professor of medicine at the University of Alabama at Birmingham, and **Charlotte Gaydos**, DrPH, MPH, MS, professor in the Division of Infectious Diseases, Department of Medicine at the Johns Hopkins University School of Medicine in Baltimore, in bringing more awareness regarding the prevalence of trichomonas vaginalis. The three scientists are scheduled to present on the subject at the upcoming July 2011 meeting of the International Society for Sexually Transmitted Diseases Research in Quebec City, Canada.

"Really, the issue is how do we yet involve another public health infection. How do we screen for it, and how do we treat it?" observes Chapin. Investigators such as Chapin, Schwebke, and Gaydos have called for the infection to be listed as a reportable disease so it receives proper attention.

Chapin offers the following scenario as a reason for increased emphasis on detecting infection: A physician phoned in a request to Chapin for help with a patient with chronic vaginitis. While the patient had been tested for various STIs and treated for vaginitis, she still suffered with symptoms. A test with the new Aptima test proved trichomonas vaginalis positive; the infection had not been detected by other methods.

Reproductive health clinicians know all too well the "revolving door patient" whose infection is incorrectly diagnosed and/or whose partner is asymptomatic and might be reinfecting the patient, says Chapin. These occurrences are similar to what clinicians saw with chlamydia 10 years ago, she notes.

Results of the current study show an increased prevalence of disease in women ages 51 to 60. The fact that the current study shows a prevalence in older women is intriguing to Chapin. "Is it a sociological thing, where they are not likely to get pregnant, not using birth control, and not using barrier contraception, or is it a more physiologic component, where their vaginal milieu is changing and they are more susceptible?" Chapin asks. "Or is it a chronic infection they may have had, but have been getting mistreated for bacterial vaginosis, which is a similar treatment? To be honest, I think that is a big part of the problem."

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Get your facility ready for HIV Testing Day

Is your facility participating in National HIV Testing Day on June 27? If not, you may be missing an important community outreach opportunity to help people learn their HIV status.

The National Association of People with AIDS started National HIV Testing Day in 1995. Every year, on June 27th, local organizations across the United States work with community partners to promote early diagnosis and HIV-testing. Even with increased emphasis on testing, the U.S. HIV epidemic is far from over, according to the Centers for Disease Control and Prevention (CDC).

"Every year, about 56,000 Americans become infected with HIV, and nearly 18,000 with AIDS die," says **Kevin Fenton**, MD, PhD, director of the CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. "More than one million people in this country are living with the virus."

What the CDC recommends.

The CDC recommends that all Americans between the ages of 13-64 be tested for HIV at least once as a routine part of medical care, regardless of their risk behavior. The CDC also recommends that those at higher risk for HIV get tested at least annually; this population includes gay and bisexual men, anyone with multiple sexual partners, those with HIV-positive partners, and injection-drug users and their sex partners.[1]

The CDC has earmarked funding for state and local health departments to increase access to HIV testing services. Such funding has resulted in more than 1.4 million HIV tests administered each year.[1] The CDC also is investing about $142 million into an HIV testing initiative targeted to populations heavily affected by HIV: African-Americans, Latinos, gay and bisexual men of all races, and injection-drug users. As of 2010, more than 1.4 million additional people had been tested as part of the initiative, 10,000 had been newly diagnosed

with HIV, and most of those tested had been linked to care.[1]

When it comes to testing success, take a tip from the Houston Department of Health and Human Services. Houston public health officials will kick off the fifth observance of "Hip Hop for HIV Awareness Intervention" this year with solid experience under their belts: about 15,000 teens and young adults took part in the 2010 Hip Hop for HIV Awareness Intervention, a four-day HIV and syphilis screening event.

The Houston health department has conducted "Testing for Tickets" for 15 years as an incentive to get citizens to learn their HIV status, says **Barry Barnes**, event coordinator. Hip Hop for HIV Awareness is an extension of that effort, he says.

Houston was among 10 cities—Atlanta; Chicago; Cleveland; Dallas; Los Angeles; Miami; Newark, NJ; New York City; and Washington, DC—that took part in the first Be Greater Than AIDS: Get Yourself Tested Week in June 2010. The multi-city event was designed to encourage Americans—particularly Black Americans—to be tested for HIV and other STDs in the week leading up to National HIV Testing Day. The Greater Than AIDS campaign, developed and distributed by the Black AIDS Media Partnership, is produced in collaboration with Act Against AIDS, a major five-year communications effort by the CDC to refocus attention on HIV and AIDS. Black Americans account for nearly half of new HIV infections in the United States, while representing just 12%of the population.[2] The Greater Than AIDS campaign emphasizes six specific actions in response to the epidemic: being informed; using condoms; getting tested—and treated, as needed; speaking openly; acting with respect; and getting involved.

To kick off its testing events, Houston public health officials relied on local media to help spread information. On the day of the national testing event, actress and HIV activist Regina King and Houston Mayor Annise Parker were interviewed on local radio, accompanied by Marlene McNeese-Ward, bureau chief for the HIV Prevention Program at the Houston health department. The event was taped for the local television station, which aired the complete story that evening, says Barnes. "I think the secret, which I think a lot of cities are missing, is that they do need a specialist in the media field to make sure the message gets out," says Barnes.

The health department has broadened the scope of its efforts each year during the HIV testing event, says Barnes. For the 2010 event, officials added screenings for sexually transmitted diseases (STDs), as well as immunizations. "We are trying to mobilize the health department into using all of the components within our own building," says Barnes. "We have tuberculosis. We have immunizations. We have STDs and HIV. It's all the same demographic."

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Teen TOPICS

Teen relationship abuse puts teens at risk

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Four hundred thousand (1.6% of U.S. adolescents) experience serious physical and/or sexual dating violence each year.[1] Within their lifetimes, 20% of U.S. female high school students report experiencing intimate partner violence.[2]

Unfortunately, intimate partner violence often goes unreported, and available data reveal a limited view of the range of abusive behaviors that can occur within adolescent dating relationships. Verbal and emotional abuse as well as other controlling behaviors might be better captured by

using the term "adolescent relationship abuse" (ARA). ARA is defined as a pattern of repeated acts in which a person physically, sexually, or emotionally abuses another person whom they are dating or in a relationship with, whether of the same or opposite sex, in which one or both partners is under age 18.[3] In addition to incidents of verbal abuse, physical, or sexual assaults, ARA can include many behaviors including but not limited to social isolation, cell phone monitoring, and controlling attendance at school or social activities.

Reproductive healthcare providers might find particularly concerning controlling behaviors related to reproductive and sexual health referred to as reproductive coercion. Attempts to impregnate a partner against her wishes; controlling pregnancy outcomes; hiding, withholding, or tampering with contraceptives; forcing sexual acts; and intentional exposure to sexually transmitted infections are all examples.

While reproductive coercion can occur in relationships without concurrent physical abuse, they often co-occur. Adolescent girls in physically abusive relationships are more likely to experience unintended pregnancy, fear the consequences of condom negotiation, and are less likely to use condoms consistently.[4,5] In one recent study of women seeking care in family planning clinics, 18% of women ages 16-20 reported experiences with reproductive coercion, and 12% reported experiences with birth control sabotage specifically.[6]

Routine visits offer window

There are numerous routine visits when seeing adolescents that provide opportunities to identify reproductive coercion. Adolescents should be asked at health visits, especially annual and routine gynecologic visits, about how safe they feel in their relationship, and providers should confirm there is no intimate partner violence or coercion. When an adolescent requests a change in contraceptive methods, it might be helpful to ask how her partner(s) feel about the previous method to reveal information about sabotage. If an adolescent wants to avoid pregnancy but is nervous about sabotage, more hidden, private methods such as injectable, implantable, or intrauterine contraceptives might be preferable to pills, patches or rings. Adolescents seeking pregnancy testing might benefit from counseling where they are asked if their current partner desires a pregnancy. Repeat visits to request emergency contraception or sexually transmitted infection testing might also prompt acknowledgement of condom refusal, tampering, or episodes of coerced unprotected sex.

Providing routine education about healthy relationships and reproductive coercion normalizes the topics. Even if an adolescent is not ready to address abuse, the discussion opens the door to future conversations. For example, if an adolescent chooses to initiate contraceptive injection use after experiencing contraceptive sabotage, follow-up visits for injections provide additional opportunities to check in about the relationship and safety. Talking with adolescents who are not directly experiencing ARA or reproductive coercion also allows the information to be passed on to others in need because adolescents commonly share health-related information with peers. Finally, a universal approach allows providers to reach male adolescents and adolescents in same-sex relationships who often are overlooked by traditional dating violence assessments.

One ARA intervention evaluated through a randomized control trial found, over 24 weeks, that among a group of age 16-29 females experiencing intimate partner violence in the last three months, those who received education about healthy relationships and reproductive coercion were 60% more likely to end a relationship because it seemed unsafe or unhealthy.[7] The intervention consisted of trained counselors providing enhanced intimate partner violence screening focused on reproductive coercion, harm reduction planning when intimate partner violence was disclosed, providing education about local intimate partner violence resources, as well as a distributing a patient pocket card to provide ongoing resources.

When assessing reproductive coercion, it is essential to discuss confidentiality rights, exceptions, and state reporting requirements at the beginning of the visit. If a disclosure of abuse or coercion is made, providers should ensure immediate safety and refer adolescents to local resources for violence prevention, counseling, and services. Making supported referrals where adolescents are directed to specific professionals known to your practice can make these sensitive services easier for teens to access.

The Family Violence Prevention Fund has developed several tools to facilitate discussions about healthy relationships, ARA and reproductive coercion. These include clinical guidelines, scripts for talking to patients about these topics, guidance on staff training, and materials to help adolescents assess their own relationship health. These and other materials are available at www.endabuse.org.

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Predict later weight gain for teens taking DMPA?

By **Jeffrey T. Jensen**, MD, MPH, Editor, *OB-GYN Clinical Alert*, Leon Speroff Professor and Vice Chair for Research, Department of Obstetrics and Gynecology, Oregon Health and Science University, Portland,

Source: Bonny AE, Secic M, Cromer B. Early weight gain related to later weight gain in adolescents on depot medroxyprogesterone acetate. Obstet Gynecol 2011; 117:793-797.

The investigators prospectively enrolled and followed a cohort of 97 teens before and six, 12, and 18 months after starting DMPA. They examined whether early weight gain observed among adolescents initiating contraception with DMPA predicts continued excessive weight gain and evaluated the risk factors for excessive weight gain. The entire study population was categorized into two groups based upon weight gain observed at six months; excessive early weight gain was defined as a gain of more than 5% of starting body weight. Excessive early weight gain was seen in 20 patients, and the remainder of the cohort (77 patients) gained 5% or less of their starting weight. Excessive early weight gain (> 5%) at six months was correlated with a higher BMI at 12 and 18 months. Although the mean BMI was not significantly different between the two groups at baseline, and both groups showed an increase in BMI at 12 and 18 months, the excessive early weight gain group demonstrated a greater and excessive increase at all time points such that the differences between groups became significant. Furthermore, the mean BMI in the excessive weight gain group moved into the obese range by the end of study. The authors concluded that teens who experience more than a 5% weight gain after six months of DMPA use are at risk for continued excessive weight gain with continuing use of the method. They suggest that a six-month checkup be used to identify adolescents at risk for continued excessive weight gain and to counsel them about contraceptive options.

Commentary

Weight gain has been reported in more than half of adolescents receiving DMPA and is cited as the primary reason for method discontinuation by more than 41% of adolescents who use the method.[1,2]

The recently published manuscript from Bonny et al represents a secondary analysis of data from a two-year prospective study of bone density and hormonal contraception.[3,4] The study population consisted of post-menarche females aged 12 to 18 years attending one of four urban adolescent health clinics in Cleveland. The current analyses

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include only those subjects who selected DMPA for contraception. All of these subjects also participated in a randomized trial evaluating an intervention for unscheduled bleeding and received adjunctive estradiol cypionate or placebo. Girls with a body weight that exceeded 250 pounds were excluded from the study.

The authors based the decision to define weight gain in the first six months of use as excessive when it exceeded 5% of the baseline weight on findings by Le and colleagues.[5] These investigators found in a study of women 16–33 years, those who gained more than 5% of their body weight within six months of DMPA initiation were at risk for future weight gain with the method. Although using this criterion, the study cohort in the Bonny paper was not dichotomized until six months; there were no significant differences in the baseline characteristics between the groups. In other words, in contrast to prior studies, race (more than 60% were African American), age, physical activity, age, or baseline BMI (more than 35% obese) did not predict weight gain at six months. A multivariant analysis confirmed this lack of association.

However, after six months of use, we can begin to make predications. At this time, a group of users at risk for significant and clinically important weight gain emerges. The screening test is simple; weigh your patient and compare the change in weight over six months as a percentage of the initial weight. If this exceeds 5%, your patient is at risk for excessive weight gain.

Since we can't make assumptions about which teens will develop unacceptable weight gain after starting DMPA, the method should be in the portfolio that we discuss with teens that present for contraceptive counseling. DMPA is a highly

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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 this issue, you must complete the evaluation form provided and return it in the reply envelope provided in this issue to receive a letter of credit. When your evaluation is received, a letter 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.

21. What antiretroviral drug is the current standard of care for reducing maternal to infant transmission of HIV?
    A. Zidovudine
    B. Nevirapine
    C. Lamivudine-3TC
    D. Maraviroc

22. Amphora, a spermicide under development, has been shown to help maintain a woman's natural pH level between which levels?
    A. 2.4 and 3.5
    B. 3.0 and 3.5
    C. 3.8 and 4.2
    D. 4.5 and 5.0

23. What is the finding of the study Stram DO, et al. Menopause 2011; 18:253-261?
    A. Hormone therapy has a detrimental cardiovascular effect in all women.
    B. Hormone therapy is indicated for use in older women alone.
    C. Hormone therapy has no cardiovascular effect on either younger or older women.
    D. Hormone therapy use might have a beneficial cardiovascular effect in younger women, but it has little similar benefit in older women.

24. What drugs are used in treatment of trichomoniasis?
    A. Metronidazole or clindamycin
    B. Metronidazole or tinidazole
    C. Tinidazole or clindamycin
    D. Tinidazole or daptomycin

Answers: 21. A 22. C 23. D 24. B

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effective and well-tolerated, reversible method. Unfortunately, rates of discontinuation are high. Concerns about weight gain and other side effects can prevent an teen from returning for a repeat injection. But the data suggest that this side effect should not be a worry for most users. Almost 80% of the population in the Bonny study did not experience excessive weight gain at six months.

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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 healthcare professionals.