# New Contraceptive Options Filling the Pipeline

BY MELINDA TANZOLA
*Contributing Writer*

Atlanta — Novel contraceptives currently being developed include norprogesterone-derived progestins, new barrier methods, and combination spermicides-microbicides, reported Dr. Michelle Fox at a conference on contraceptive technology sponsored by Contemporary Forums.

"We've made a lot of progress in contraception, but we are still far from the ideal," said Dr. Fox, who is director of family planning at the University of Maryland, Baltimore.

The only contraceptive that Dr. Fox predicted would be approved within the next year is a continuous combined oral contraceptive pill that contains 90 mcg of levonorgestrel and 20 mcg of ethinyl estradiol, to be taken daily.

The product, named Lybrel by Wyeth Pharmaceuticals, has no hormone-free period and has demonstrated favorable bleeding patterns in clinical trials.

In contrast with today's testosterone-based progestins, new progestins under development are being derived from 19-norprogesterone, a compound that is not androgenic and may better inhibit ovulation.

One such norprogesterone-based product is Nestorone, which is being developed by the Population Council. A limitation of Nestorone is its inactivity when delivered orally. Because the compound is readily absorbed through the vaginal mucosa and skin, Nestorone-based combined hormonal vaginal rings and spray-on contraceptives are being developed.

**A hot topic of research is the quest to develop a spermicide alternative to nonoxynol-9, which all spermicidal products in the United States now contain.**

New barrier methods being evaluated include a one-size silicone diaphragm that would not require individual fitting and a female condom that is more comfortable and easier to use.

A hot topic of research is the quest to develop a spermicide alternative to nonoxynol-9. Currently, all spermicidal products in the United States contain nonoxynol-9. While the compound is considered safe for most users, it is a detergent that disrupts epithelial surfaces. A recent study suggested that frequent use of nonoxynol-9 by sex workers could increase the risk of HIV transmission in high-risk women.

Several buffer-based spermicides are currently under development. These compounds inhibit sperm by maintaining the acidic environment of the vagina.

They have also been shown to inhibit multiple sexually transmitted infections in animal models.

One product, Acidform, forms a protective bioadhesive coating over the cervix and vagina. A 2004 study showed that Acidform can be applied up to 10 hours before anticipated intercourse.

Finally, a new surfactant product has demonstrated less irritation than nonoxynol-9 and has potent activity against both sperm and a range of pathogens in vitro. The contraceptive efficacy of the product is currently being evaluated in a phase III trial. ■

# Ease of Use Key Requirement For Adolescent Contraception

BY FRAN LOWRY
*Orlando Bureau*

Atlanta — When it comes to choosing an effective method of contraception for adolescents, ease of use should probably top the list of requirements. Dr. Geri Hewitt said at the annual meeting of the American Academy of Pediatrics.

Adolescents, particularly younger teens, are less likely to use consistent contraception, and when they do, they are less likely to use effective methods. In fact, adolescents are reluctant to seek medical contraceptive advice, even though they may already be sexually active, said Dr. Hewitt of Ohio State University, Columbus.

**One way to get teenagers to open up about their sexual activity is by asking them if they have a boyfriend.**

**DR. HEWITT**

Teens face numerous barriers to good contraception, said Dr. Hewitt. Teens are still covered by their parents' health insurance and so may be shy, or feel awkward, approaching their physician for contraception advice. They have inadequate knowledge about good contraception, they tend to be in denial about engaging in sexual activity, they have concerns about the side effects of "the pill," and they also fear, mistakenly as it turns out, that they will have to have a pelvic examination in order to obtain a prescription for an oral contraceptive.

"Planning is not what they do. ... They have to acknowledge that they are going to be sexually active, and many teenagers are not mature enough to do this," Dr. Hewitt said.

One way she gets her teenage patients to open up about their sexual activity is by asking them if they have a boyfriend. "This approach often works better than directly asking them if they are sexually active, or even if they are thinking of having sex," she said.

Dr. Hewitt highlighted these new options for adolescent contraception:

► **The transdermal contraceptive patch (Ortho Evra).** This patch is highly effective, with an easy, once-a-week dosing schedule. The active ingredients, norelgestromin 150 mcg/day and ethinyl estradiol 20 mcg/day, are released from the medicated layer of the patch and delivered into the systemic circulation, in a steady state, with no peaks and troughs. The patch is at its most effective in teens who are within 35% of their ideal body weight. But it may fall off with excessive heat, humidity, exercise, and swimming. "Mothers like it. They say 'if I have to go to war with my daughter about taking her contraception, at least I only have to do it once a week,' " Dr. Hewitt said.

► **The combined contraceptive vaginal ring (NuvaRing).** This flexible, transparent ring contains ethinyl estradiol and etonogestrel. The ring is inserted into the vagina for 3 weeks, and then removed for 1 week for a withdrawal bleed. "If it's in the vagina, it's in the right spot. It needs to be in contact with the vaginal mucosa for transvaginal absorption. If she can use a tampon, she can use the Nuvaring." The Nuvaring uses the "absolute lowest" dose of estrogen, which is a "good selling point" for teens, she said.

► **The subdermal contraceptive rod (Implanon).** This single-rod, nonbiodegradable implantable contraceptive rod is 4 cm in length and 2 mm in diameter, and it contains progestin etonogestrel, an active metabolite of desogestrel. The rod provides contraception for up to 3 years. "The Implanon is much easier to insert and remove than the Norplant, and is very highly effective. But, you do need someone to insert and remove the rod, and you must allow the teen to [have it removed] if she wants," Dr. Hewitt said. ■

# *Fear of Infection May Not Curb High-Risk Teen Sex*

BY BRUCE K. DIXON
*Chicago Bureau*

Indianapolis — Adolescent women at high risk for acquiring sexually transmitted infections may not respond well to counseling and prevention efforts that focus on the fear of becoming infected, according to a study by researchers at Indiana University in Indianapolis.

Instead, programs and physicians may need to tailor their pregnancy and sexually transmitted infection (STI) counseling to recent patterns of sexual behavior, said Dr. Mary A. Ott of the university's section of adolescent medicine.

"Physicians and other counselors should be aware that fear related to being infected influences sexual behavior only in the short term, and therefore should focus on interpersonal and relationship factors to influence long-term decisions about sex and abstinence," Dr. Ott said at the annual meeting of the Midwest Society for Pediatric Research.

This urban study of 378 high-risk women aged 14-18 years indicated that the decision to have sex after a period of abstinence was strongly influenced by the relationship between the woman and the man she was involved with, as well as by sexual interest and mood, Dr. Ott explained, adding that this challenges the popular notion that adolescent sex is largely casual and lacking in personal commitment and caring.

The cohort of young women completed quarterly face-to-face interviews and two 3-month daily diary collections per year, and were followed up for a maximum of 4.5 years.

Periods of abstinence were defined as consecutive days of no vaginal sex as recorded in the daily diary. At the time of the study, 9% of the women had an active STI, either *Chlamydia trachomatis, Neisseria gonorrhea,* or *Trichomonas vaginalis.*

Frailty models were used to estimate the effects of intrapersonal and interpersonal factors, as well as the effect of STI diagnosis, on the time to ending a period of abstinence. A frailty model is an adaptation of a proportional hazards model that controls for multiple observations from a single participant.

The study cohort had more than 6,000 periods of abstinence, of which 55% ended in sex. The median length of abstinence was 10 days, and the mean length was 39 days.

"Each year increase in a participant's age increased the hazard of ending an abstinence period with sex by 22%," Dr. Ott said.

"For interpersonal influences, each unit increase in positive mood increased the hazard by 2%, each unit increase in negative mood decreased the hazard by 1%, and each unit increase in sexual interest raised the hazard by 22%," she said.

Looking at interpersonal influences, each unit increase in partner support hiked the hazard of having sex by 25%, each unit increase in relationship quality raised the hazard by 5%, while a recent STI decreased the hazard of having sex and stopping a period of abstinence by 17%.

However, although mood and the influence of a previous STI lowered the risk of ending short periods of abstinence, they had little effect on ending longer periods of abstinence.

The longer that young women at high risk for STIs went without having sex, the more likely they were to remain abstinent, Dr. Ott said. ■