AU InforMed

Volume 6 Number 16 (Issue 193) *Tuesday, June 10, 2008*

Guest Editors: Crystel Burroughs, Pharm.D. Candidate (Issue Editor), Katrin Alexander, Pharm.D. Candidate , Acho Gana, Pharm.D. Candidate, Emily Gray, Pharm.D. Candidate, Sophenia Grover, Pharm.D. Candidate, Sydney Jones, Pharm.D. Candidate and Leah Newton, Pharm.D. Candidate

Special Edition

From Here to Maternity

Completed as a course requirement for Auburn University Harrison School of Pharmacy, Drug Literature I. Also, it calls attention to several observances in May, including:

May 1 – 31, National Teen Pregnancy Prevention Month
Advocates for Youth
Washington, DC 20036
tom@advocatesforyouth.org
www.advocatesforyouth.org/publications/ntppm.htm

May 11 – 17,
National Alcohol- and Other Drug-Related Birth Defects Week
National Council on Alcoholism and Drug Dependence, Inc. (NCADD)
president@ncadd.org
www.ncadd.org

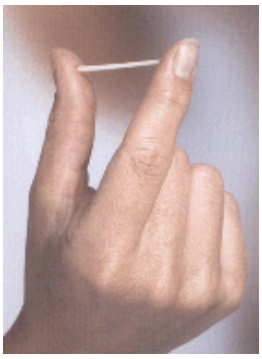
An electronic bulletin of drug and health-related news highlights, a service of …
Auburn University, Harrison School of Pharmacy, Drug Information Center
• Phone 334-844-4400 • Fax 334-844-8366 • http://www.pharmacy.auburn.edu/dilrc/dilrc.htm
Bernie R. Olin, Pharm.D., Director

FROM HERE TO MATERNITY

Auburn University Harrison School of Pharmacy
www.auwomen@auburn.edu

Implant and Forget It

By Leah Newton



The new IMPLANON™!

With IMPLANON™, just implant and forget it. That's right: no pills, no missed doses, and no accidents. IMPLANON™ 68 mg (etonogestrel implant) is the first and only implantable contraceptive approved by the U.S Food and Drug Administration for use in the United States. The matchstick-size rod, which releases the progestin etonogestrel, is inserted underneath the skin of the arm just a few inches above the elbow. It provides consistent protection against pregnancy for three years, unless removed.[1]The procedure requires only a local anesthetic and takes four minutes or less.

During a two-year, multi-center trial involving 330 women, 169 of those completed the study with 100% efficacy in preventing pregnancy. Of the 161 who did not complete the study, 13% cited bleeding-spotting changes as the most common reason for discontinuation. Adverse events reported with implant use were headache (23.6%), vaginitis (17%), acne (16.7%), and painful periods (15.2%). Fewer than 5% of women experienced implant site discomfort, limited to brief, mild pain after insertion or removal.[2]

As if protection isn't enough, IMPLANON™ is a great birth control choice for those who wish to keep their options open. Approximately 90% of women report regular menstrual cycles within 3 weeks of removing the implant, marking a rapid return to pre-treatment fertility levels. Possible incidence of pregnancy can occur as soon as 90 days after removal. [2,3]

Due to the uniqueness of the product, Organon USA, which markets IMPLANON™, will be sponsoring a nationwide training program for healthcare professionals on implantation/removal procedures. The company expects widespread availability this year.[1]

1. Organon USA [homepage on the internet]. Roseland: News and Events. [updated 2006 Jul 18; cited 2007 Apr 18]. Available from: http://www.organon-usa.com.

2. Funk S, Miller MM, Mishell D jr, Archer DF, Poindexter A, Schmidt J, et al. for the IMPLANON US Study Group. Safety and efficacy of IMPLANON™, a single-rod implantable contraceptive containing etonogestrel. *Contraception*. 2005;71:319-326.

3. Diaz D. Contraceptive implants and lactation. *Contraception*. 2002;65:39-46.

Volume 1, Issue 10

Friday, April 20, 2007

Special points of interest:

- *The new IMPLANON™*
- *Plan B™*
- *Nutrition Tips for You and Baby!*
- *Fetal Alcohol Syndrome*
- *Coping with Gestational Diabetes*
- *Drugs to Avoid*
- *Breastfeeding?*

Do You Have a Plan B?

By Crystel Burroughs

In emergency situations, every minute counts. This is especially true if you've forgotten your birth control pill or, worse, another method of contraception has failed. Now, as of August 2006, you no longer have to wait at the doctor's office for a prescription for Plan B™, the emergency contraceptive proven effective at preventing pregnancy when used within 72 hours after intercourse.[1] The U.S. Food and Drug Administration (FDA) has approved its over-the-counter (OTC) use in women aged 18 years and older; however, women aged 17 years and under still need to obtain a prescription.[2]

Plan B™ is not the same as medical abortion because it is only effective at preventing pregnancy before implantation occurs; therefore, if taken during pregnancy, it will not harm the developing fetus. Even though Plan B™ may be used repeatedly, it is a less effective method for long-term contraception.[1] For that reason, a long-term contraceptive should still be used to reduce the risk of an undesired pregnancy. Only now, in those times of emergency, Plan B is a recommended and accessible alternative.[3]

1. American College of Obstetricians and Gynecologists. ACOG practice bulletin. Emergency contraception. Number 25, December 2005. (Replaces Practice Bulletin Number 25, March 2001). Obstet Gynecol 2005;106(6):1443-1452.

2. U.S. Food and Drug Administration [homepage on the Internet], Rockville, Maryland; U.S. Food and Drug Administration; c2006 [updated 2006 Aug 24; cited 2007 Apr 18]. FDA approves over-the-counter access for Plan B™ for women 18 and older; prescription remains required for those 17 and under. Available from: http://www.fda.gov/bbs/topics/NEWS/2006/NEW01436.html.

3. Gilliam M. Emergency contraception: politics and science move forward. Obstet Gynecol 2006;108(5):1060-1061.

Nutrition During Pregnancy

By Katrin Alexander

Fruits and vegetables are an essential source of vitamins necessary for a healthy pregnancy. *Pass the crudités*!

"A baby is something you carry inside you for nine months, in your arms for three years, and in your heart till the day you die."
Mary Mason

There are several foods that should be considered while pregnant to promote the health of the mother as well as the child. One of the most important nutrients to consume during pregnancy is folic acid. A deficiency in this vitamin can lead to neural birth defects, such as spina bifida and anencephaly. Spina bifida is a condition which occurs when the spine does not correctly fuse with the back and may cause paralysis. Anencephaly usually causes death because the brain is unable to develop properly.[1] Foods rich in folic acids are vegetables such as broccoli, spinach, and asparagus as well as fruits, especially oranges. Many breakfast cereals and breads are also fortified with folic acid. A daily prenatal vitamin may also add to the proper amount of folic acid that is needed during pregnancy, a recommendation of 600 micrograms.[2]

An increased calcium intake during pregnancy should also be considered. Calcium is required for proper fetal development, and if the mother does not consume enough, the fetus utilizes its mother's storage. As a consequence, this may lead to osteoporosis in the mother. A pregnant woman should consume 1200 to 1500 milligrams of calcium per day and can do so by consuming foods rich in calcium like yogurts, milk, cheese, and fortified orange juice.[3] In addition to osteoporosis, constipation and hemorrhoids are two other conditions that are commonly experienced by pregnant women. A diet rich in fiber may help to alleviate these conditions. Fiber-rich foods are beans, whole wheat products such as cereal and breads, and all fruits and vegetables. It is also recommended to drink plenty of fluids, especially water, during pregnancy to promote healthy digestion.[4]

There are several foods that should be avoided while pregnant. Mercury is contained in high amounts in certain types of large fish and may cause damage to the fetus' nervous system; therefore, it should be avoided during pregnancy. Shark, swordfish, tilefish, and king mackerel are some types of fish that should not be eaten by pregnant women. However, others, such as salmon and catfish and other small fish, are recommended for consumption during pregnancy.[4]

It is also important to note the proper storage of foods. Listeriosis, an infection caused by a bacterium, can be spread if certain foods are not stored properly and may cause birth defects, miscarriages, and death to the fetus. Because the complications of this infection are detrimental to the fetus, pregnant women should avoid eating hot dogs, cold cut sandwich meat, refrigerated meat spreads and pastes, soft cheeses, smoked seafood, and milk products that are not pasteurized.[4]

1. WebMd [homepage on the Internet]. Atlanta: WebMD, Inc; c2005-2007 (updated 2007 Apr 18; cited 2007 Apr 18). Available from: http://children.webmd.com/tc/Spina-Bifida-Home-Treatment.

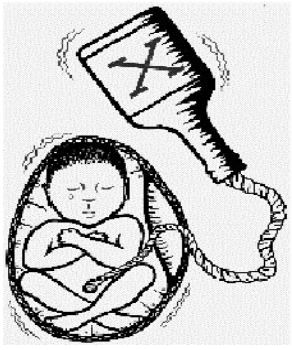
2. Mahan K. L., Escott-Stump S. Krause's Food, Nutrition, & Diet Therapy. 11th ed. Philadelphia: Saunders; 2004.

3. BabyCenter [homepage on the Internet]. San Francisco: BabyCenter LLC; c1997-2007 (updated 2003 Apr; cited 2007 Apr 18). Available from: http://www.babycenter.com/refcap/pregnancy/pregnancynutrition/665.html.

4. FDA Center for Food Safety and Applied Nutrition [homepage on the Internet]. Rockville: U.S. Food and Drug Administration; c2006 (updated 2005 Aug 24; cited 2007 Apr 18). Available from: http://www.cfsan.fda.gov/~dms/admehg3.html.

Are You Drinking? So Is Your Baby.

By Sydney Jones



Knowing the dangers of alcohol can save your baby.

Ladies, before you pick up that beer, glass of wine, or mixed drink stop and realize that if you are drinking, so is your baby. Alcohol travels through your bloodstream where it crosses the placenta and reaches your baby. The risks involved with consuming alcohol during pregnancy include a group of birth defects called Fetal Alcohol Syndrome (FAS). Alcohol can affect your baby's growth in the first few weeks of development, sometimes before you even know you are pregnant. The defects that accompany FAS can affect your baby for a lifetime. Defects such as premature birth and low birth weight, facial deformities, memory, judgment, and attention problems, and hyperactivity are among the many that can occur. The more you drink, the higher the risks. There is no approved amount of alcohol that is safe to consume during your pregnancy. Remember this when you take a sip of your favorite beverage – FAS is the leading known preventable cause of mental retardation and birth defects. Put down that drink and prevent FAS in your baby.[1,2]

1. National Organization on Fetal Alcohol Syndrome [homepage on the Internet]. Washington DC: National Organization; c2001-04 (cited 16 April 2007). Available from http://www.nofas.org/.

2. Centers for Disease Control and Prevention [homepage on the internet]. Atlanta; CDC (updated 2007 Jan 12; cited 2007 Apr 16). Available from http://www.cdc.gov/ncbddd/fas/.

What is Gestational Diabetes?

By Sophenia Grover

Gestational diabetes occurs in about 3%-5% of pregnant women in the U.S and is characterized by high blood glucose (sugar) levels, which are mainly a result of hormonal changes. Higher amounts of certain hormones made in the placenta interfere with insulin's ability to manage glucose, a condition called "insulin resistance." As the pregnancy progresses, more hormones are produced, which further increases the body's resistance to insulin. In a normal pregnancy, the mother's body is able to compensate for the increase in hormones by producing three times more insulin in order to combat the insulin resistance. If the mother's body is unable to keep up with the insulin demand, her sugar levels rise above normal resulting in gestational diabetes.[1] Some of the risk factors for gestational diabetes are being overweight prior to becoming pregnant, having a family history of diabetes, and having gestational diabetes with a previous pregnancy.[2] Diagnosis of gestational diabetes is usually done between the 24th and 28th week of pregnancy, which is when insulin resistance usually begins. If in a past pregnancy you were diagnosed with gestational diabetes or you possess certain risk factors associated with the condition, you may be given the test as early as the 13th week of pregnancy. The screening test for gestational diabetes consists of an oral glucose tolerance test, conducted by drinking a sweetened liquid, containing 50g of glucose, very quickly. The glucose is absorbed rapidly, causing an increase in blood sugar levels within 30-60 minutes. Thirty minutes after drinking the liquid, a blood sample is taken to measure how the glucose solution was metabolized. If the test results are not normal (i.e.<110 mg/dL), another diabetes test is done; this time, the mother is not to eat anything before the test. If the second test yields abnormal results, you have gestational diabetes.[2]

1. Greenspan, F.S., Strewler, G.J. Basic and Clinical Endocrinology. 5th Ed. Stamford: Appleton and Lange; 1995.

2. WebMD [homepage on the Internet]. Atlanta: WebMD, Inc; c2005-2007 (updated 2007 Apr 18; cited 2007 Apr 18). Available from http://www.webmd.com/baby/guide/pregnancy-gestational-diabetes.

Diagnosis of gestational diabetes is usually done between the 24th and 28th week of pregnancy.

Drugs to Avoid During Pregnancy and Breastfeeding

By Acho Gana

The FDA classification of drugs in pregnancy includes five classes: A, B, C, D, X with a classification of X being absolutely contraindicated during pregnancy. There are a wide variety of effects on the fetus upon exposure to drugs contraindicated in pregnancy. Under normal conditions, no drugs should be taken during pregnancy unless absolutely necessary.[1] Talk to your doctor before taking any drugs for high blood pressure, high cholesterol, or contraception if think you might be or plan on getting pregnant. To the right is a list of some drugs that are absolutely a *DON'T* during pregnancy and breastfeeding.[2] This list is in no way exhaustive.

Drug	Effect on Fetus
Estradiol and norethindrone or any oral contraceptives*	Fetal abnormalities
Fluorouracil, 5-FU*	Miscarriages and birth defects
Lovastatin*	Fetal harm
Isotretinoin*	Adverse fetal effects in ani-
Aspirin, ASA; pravastatin combination	Fetal harm
Tazarotene: Retinoids*	Fetal harm; hydrocephaly and
Belladonna Alkaloids; Ergotamine; Phenobarbital*	Inhibits fetal growth in animal studies
Benzpheamine*	Teratogenic and embryotoxic
Temazepam*	Fetal abnormalities
Simvastatin*	Potential for fetal harm
Warfarin*	Fetal hemorrhage in fetus

~All drugs above are classified as category X.

*Contraindicated in breastfeeding as well

1. Drug Facts and Comparisons. Electronic edition. St. Louis: Wolters Kluwer Health, 2007, section: Pregnancy and Lactation.

2. Gold Standard, Inc (accessed on 4/17/07). Clinical Pharmacology, [Drug information web page]. URL:http://clinicalpharmacology.com

"There are three reasons for breastfeeding: the milk is always at the right temperature, it comes in attractive containers, and the cat can't get it."

Irena Chalmers

AUBURN UNIVERSITY
HARRISON SCHOOL OF

Providing the latest information in prevention, preparation, and pregnancy.

HARRISON SCHOOL of PHARMACY
AUBURN UNIVERSITY

AU Harrison School of Pharmacy
Walker Building
Auburn, AL 36849

Phone: 334-844-4400
Fax: 334-844-8366
E-mail: auwomen@auburn.edu

WE'RE ON THE WEB!

WWW.AUWOMEN.ORG

Editor-in-Chief: Crystel Burroughs
Contributing Authors: Katrin Alexander, Acho Gana, Emily Gray, Sophenia Grover, Sydney Jones, and Leah Newton

Is Breastfeeding for You?

By Emily Gray

Breastfeeding can be a wonderful, natural experience that allows a mother to bond with and nurture her new baby. But, even with the best of maternal instincts, it can also be a scary, frustrating, and intimidating endeavor. Ultimately, the choice of whether to breastfeed is one of personal preference. In making the decision, it is important to educate yourself on the advantages and disadvantages of breastfeeding and the impact it has on the health of your child, as well as your own.

The benefits of breastfeeding are many. First, the quality of nutrition that the baby receives through his/her mother's breast milk is perfect for newborns, especially premature babies. The milk contains just the right amount of fat, sugar, water, and protein to properly nourish the infant. The milk is easily accessible and digestible and it is very economical when compared with formula bottle-feeding.[1] Colostrum, the "fluid secreted by the breast immediately following childbirth," is a natural laxative and is effective in helping the baby have its first bowel movement. In doing so, it removes any built up toxins and prevents jaundice, or accumulation of dead red blood cells. The production of colostrum normally lasts between four and seven days, with its protein and mineral concentrations decreasing as time progresses.[2] Further advantages for the developing baby include greater disease protection due to passage of maternal antibodies, as well as fewer incidences of allergies, and strengthening of the baby's jaws, teeth, and palate. [2,3] In addition to the bond that seems to develop between mother and child, benefits for the mom are ovulation suppression, although not thought to be a definite source of birth control and weight loss. Breastfeeding burns extra calories, helping you to lose those unwanted pregnancy pounds. It also helps to restore the size of the uterus and minimizes any postpartum bleeding. [1,2,3]

Despite the benefits, there are various reasons why some women opt to forgo breastfeeding. In certain cases, vaginal dryness occurs, accompanied by a decrease in sexual drive.[2,3] This problem can be addressed by the use of lubrication during intercourse.[2] In addition, a low maternal weight can be a concern of mothers who are contemplating breastfeeding due to the weight loss effects noted above. Certain infections such as HIV/AIDS or Hepatitis B are considered to be contraindications for these may be passed along to your baby. Some other disadvantages can be leaking nipples, breast engorgement, and overall breast discomfort.[3]

Motherhood involves making difficult decisions and the question of breastfeeding is one that may not be easily answered. Seek the advice of other moms; ask how they valued their breastfeeding experience. More importantly, talk to your physician and lactation specialist about further benefits and/or alternatives to breastfeeding. It's your choice to breastfeed, but it's your duty as a mom to be informed.

1. U.S. Department of Health and Human Services; Office on Women's Health [homepage on the internet]. Washington DC; [updated 2007 Apr 16; cited 2007 Apr 18]. Avalable from: www.womenshealth.gov.

2. Youngkin EQ, Davis MS. Women's Health: A Primary Care Clinical Guide. 2nd ed. Stamford: Appleton & Lange; 1998.

3. Scott JR, Di Saia PJ, Hammond CB, Spellacy WN, editors. Danforth's Obstetrics & Gynecology. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 1999.

Another good source of information is the Planned Parenthood Federation of America and in conjunction with the R.E.A.L. Life Program intended to promote pregnancy education nationwide. For more information, visit www.plannedparenthood.org