
Current Medical Research

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Natural Family Planning Diocesan Activity Report

SUPPLEMENT

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"Pelvic Inflammatory Disease: The Influence of Contraceptive, Sexual, and Social Life Events." O Lidegaard and P. Helm. *Contraception* May 1990, 41:475-483.

Six hundred twenty (620) Danish women, aged 15-54 participated in an in-depth interview about life events and sexual behavior. Two-thirds had never had pelvic inflammatory disease (PID), while one-third had an average of three episodes. The sexual parameter with the highest predictive value for later PID was the age at initiating intercourse (the coital debut). Women with coital debut before their 16th year had double the number of PIDs than women with coital debut at age 18 or later. The average number of coital acts were more significant for causing episodes of PID than the number of sexual partners, which was merely a risk indicator. Women who used barrier methods, condom, and/or diaphragm for two years or more had 23% fewer PIDs than women who had used these methods for less than two years. The small number of PIDs among women at high socio-economic levels could be explained by a later coital debut and/or longer use of barrier methods than that of women in lower socio-economic groups.

"Falposcopy: A Microendoscopic Transvaginal Technique for Diagnosing and Treating Endotubal Disease Incorporating Guide Wire Cannulation and Direct Balloon Tuboplasty." J. Kerin, L. Daykhovsky, W. Grundfest, and E. Surrey. *Journal of Reproductive Medicine* June 1990, 35:606-612.

Falposcopy uses a new instrument for looking at the fallopian tubes. Kerin and group report their findings with the falposcope which is actually threaded through a hysteroscope. This instrument which has an outside diameter of 0.5mm, permits inspection of the inside of the tube. Blockages in various parts of the tube were found in 25 of the 35 patients studied and a technique of inserting a guide wire and balloon to dilate the block was performed. This is similar to techniques used by cardiologists in dilating blocked vessels in the heart. Six of ten cases appeared to be successful, while another six were partly dilated. Five completely blocked areas did not yield to treatment. Three cases of tubal perforation were followed up by laparoscopy. There was no tubal bleeding or hematoma. Long-term follow-up studies are in process. (This may be a valuable new technique for women with blocked tubes. Ed.)

"Vas Deferens Occlusion by Percutaneous Injection of Polyurethane Elastomer Plugs: Clinical Experience and Reversibility." Z. Sheng-cai. *Contraception* May 1990, 41:453-459.

Polyurethane solution was injected into the vas deferens of 12,000 men to form plugs. Fifty-six (56) had minor complications. Follow-up of 500 men for up to three years showed that only 2% continued to show sperm in the ejaculate. Eighty-six (86) men asked for removal of the plugs. So far 51 have initiated pregnancies. (This may be the beginning of reversible vasectomy. Ed.)

"High Speed Cinematography of the Initial Break-Point of Latex Condoms during the Air Burst Test." R.R. Stube, B. Voeller, and A. Davidhazy. *Contraception* June 1990, 41:591-603.

High speed cinematography of latex condoms inflated to burst under standard conditions reveals that the condom typically begins to break at a small point on the shank and the break then rapidly spreads throughout the surface ending up at the point where the condom is attached to the instrument. This sequence is the reverse of what has been thought to occur and suggests that the value of the air burst test as a standard for assessing manufacture and quality control, as well as for condom strength measurements, is at least called into question.

"Multivitamin/Folic Acid Supplementation in Early Pregnancy Reduces the Prevalence of Neural Tube Defects." A. Milunsky, H. Jick, S.S. Jick, C.L. Bruell, D.S. MacLaughlin, K.J. Rothman, and W. Willett. *Journal of American Medical Association* 1989, 262:2847-2852.

Multivitamin intake in general and folic acid in particular was examined relative to the risk of neural tube defects in a cohort of 23,491 women who were undergoing maternal serum alpha-fetoprotein screening or amniocentesis around 16 weeks gestation. These tests were performed to detect neural tube defects, such as spina bifida, with 97% follow-up on pregnancy outcome. Forty-nine (49) pregnancies had neural tube defects, a prevalence of 3.5 per thousand among women who did not

use multivitamins before or after conception or used multivitamins only before conception. When women used folic acid containing multivitamins during the first 6-8 weeks of pregnancy, the neural tube defect incidence was only 0.9 per thousand (prevalence ratio 0.27; 95% confidence interval, 0.12 to 0.59 compared with never users.) Unless folic acid was taken during the first six weeks of pregnancy neural tube defect rates were similar to nonusers.

"An Epidemiologic Study of Contraception and Preeclampsia." H.S. Klonoff-Cohen, D.A. Savita, R.C. Cefalo, and M.F. McCann. *Journal of the American Medical Association* December 1989, 262:3143-3147.

Contraceptive methods which prevent exposure to sperm and seminal fluid are associated with more than twice the risk of developing preeclampsia during the subsequent pregnancy. One hundred ten (110) women in their first pregnancy with preeclampsia were compared with 115 pregnant women without preeclampsia in a matched case-control study. Unconditional logistic regression analysis indicated a 2.7 fold increased risk of preeclampsia (pregnancy associated hypertension) for users of contraception that prevent exposure to sperm. The fewer the episodes of sperm exposure, the greater the increase and risk for preeclampsia. Where more than one partner had impregnated the woman, changed paternity raised the odds to the initial baseline. The authors hypothesized that "Preeclampsia may be influenced by factors such as maternal inheritance of a predisposition to preeclampsia, the number of pregnancies, and a change of partners as well as exposure to sperm and seminal fluid through intercourse. Several mechanisms might explain the effect of the latter: trophoblast-lymphocyte cross-reactive antigens from the seminal plasma when deposited in the vagina could perhaps serve as an antigenic source of allogeneic recognition in women; an unidentified agent might be

present in the sperm or seminal fluid; or certain forms of birth control through nonimmunologic mechanisms might prevent normal adaptive mechanisms in pregnancy." The difference in rates between single women who presumably had multiple partners and irregular intercourse compared to married women whose husbands used condoms regularly could be explained by the fact that "slippage" of condoms occurs fairly regularly, thus accustoming the woman to her husband's semen. The risk of preeclampsia is considerably lower with oral contraceptives. The data are valid even after controlling for exclusion of OC's for hypertensive patients. While barrier methods may contribute to as many as 60% of preeclamptic cases, additional studies are required before appropriate recommendations should be considered.

"A Guide to Interpreting Contraceptive Efficacy Studies." J. Trussell, R.A. Hatcher, W. Cates, F.H. Steward, and K. Kost. *Obstetrics and Gynecology* September 1990, 76:558-567.

Trussell and group have published essentially the same article in *Studies in Family Planning* and *Family Planning Perspectives*. While this article has a slightly different emphasis, the rates are the same as given in the Summer 1990 *Science Notes*. Their recommendations for future studies include one new point: They recommend that failure rates should be published for more than the first year of use because all methods become more effective as clients become more expert in their use.

OF INTEREST

The Lactation Institute & Pacific Oaks College, Encino, California offers a B.A., M.A., and assorted certificates for Lactation Specialists. Georgetown University offers a six day course for *Lactation Consultants* as preparation for the certification examination of the International Board of Lactation Consul-

tant Examiners. Participants come from nursing, physical therapy, primary health care, among others. Several La Leche members are consultants to the Encino program. While this appears to be one more instance of the medicalization of health, it also offers an opportunity of informing such specialists of the usefulness of NFP for the nursing mother.

The latest ACOG (American College of Obstetricians and Gynecologists), pamphlet on *Patient Education in Contraception*, (AP005) uses Trussell et al. figures for the (use)effectiveness of Periodic Abstinence - 20/100 women in the first year of typical use. Foam - 21, vaginal sponge and diaphragm - 18, condom - 12, etc. (Ref. *Science Notes* Summer 1990). Defines periodic abstinence: prevention of pregnancy by avoiding sexual intercourse during and close to the time of ovulation. (!)

Another in the series, *Menstruation*, (AP049) describes ovulation, menstruation, dysmenorrhea, PMS and oral contraception in one breath, never a word about mucus, or any other natural signs of ovulation.

"Modern Oral Contraceptives and Dysmenorrhoea." M. Nabrink, L. Birgersson, A-S Colling-Saltin, T. Solum. *Contraception* September 1990, 42:275-283.

Triphasic oral contraceptives did not abolish dysmenorrhoea in 23 young women, indicating that they did not suppress ovulation. These women were helped by a monophasic preparation containing 30 micrograms of ethinylestradiol and 150 micrograms of desogestrel. The authors state that ultrasound studies had shown pre-ovulatory follicles in one out of three cycles of women who were on modern triphasic oral contraceptives, hence chose the conventional monophasic pill which suppresses gonadotrophin secretion effectively. (Since many women are now taking triphasics, the question of the abortifacient effect of the pill has resurfaced.)

"Absence of Need for Amniocentesis in Patients with Elevated Levels of Maternal Serum Alpha-Fetoprotein and Normal Ultrasonographic Examinations." A.S. Nadel, J.K. Green, L.B. Holmes, F.D. Frigoletto, Jr., and B.R. Benacerraf. *The New England Journal of Medicine* August 1990, 323:557-561.

Ultrasound studies of the fetus have become sufficiently reliable to preclude the "need" for amniocentesis in women whose serum alpha-fetoprotein was elevated. The ultrasound studies were reliable in all cases (51 of spinabifida and other defects who were delivered or aborted). Because the risk of abortion following amniocentesis is actually greater than the possibility of false negative reading of the ultrasound, the authors conclude that women with elevated alpha-fetoprotein could (safely) decide against amniocentesis (without risking misdiagnosis). [More than a decade ago, Dr. Hymie Gordon, Geneticist at the Mayo Clinic, had already pointed out that more normal fetuses would be lost than abnormal fetuses detected through amniocentesis.]

"Hormone-Replacement Therapy and the Risk of Breast Cancer". B.S. Hulka. *Ca - A Cancer Journal for Clinicians* September/October 1990, 40:289-296.

Hulka reviews studies on the risk of developing breast cancer after hormonal replacement in post-menopause. She finds that after 15 or more years of estrogen replacement therapy, the relative risk in U.S. subjects was 1.5. European subjects showed a higher risk after shorter duration of hormones. This may be due to the different types of estrogen used in Europe. [Beneficial effects of estrogen replacement during menopause on retention of bone mass and prevention of increased cholesterol-based atheromatous (fatty) deposits in the arteries of the heart and brain must be balanced by the fact that estrogen can accelerate and associate with breast cancer and can cause cancer of the endometrium unless it is balanced by progestins. Progestins reduce the beneficial effect of estrogen on plasma lipids by one-third, but profoundly affect the

possibility of developing endometrial cancer. Unfortunately, they cause cellular proliferation in the breast. Recommendations for hormonal replacement therapy are based on knowledge of the patient's overall status, personal and family history.]

"Antifertility Efficacy of the Plant *Striga Lutea* (Scrophulariaceae) on Rats." S.P. Hiremath and S. Hanumantha Rao. *Contraception* October 1990, 42:467-477.

Rats were tested for anti-implantation activity of two flavone compounds isolated from the plant *S. lutea*. This plant has been known in North Karnataka, India, formerly Mysore, to produce abortions. The present study was carried out to evaluate the anti-implantation effect of two compounds: acacetin and luteolin. A single dose of either drug, 50 mg per kilo of body weight, on any one of days 1-4 post-coitum was 100% effective in preventing implantation. Anti-estrogenic activity was very weak, insufficient to be considered contraceptive.

"Volatile Fraction of Neem Oil as a Spermicide." S.S. Riar, C. Devakumar, G. Ilavazhagan, J. Bardhan, A.K. Kain, P. Thomas, R. Singh, and B. Singh. *Contraception* October 1990, 42:479-487.

The medical properties of the Indian neem tree has been known for ages. Recently, neem oil was found to possess strong spermicidal activity against human spermatozoa when tried in mid-cycle cervical mucus of the rhesus monkey, and when rat sperm and human semen were tested both in vitro and in rabbits. Vaginal irritation in the rabbits was minimal. No structural alteration in the uterus or cervix were observed. Based on the rabbit studies, a study of neem impregnated gelatin in rhesus monkeys is now in progress. It appears to be highly spermicidal and safe to use intravaginally.

"Treatment of tubal pregnancy by laparoscope-guided injection of prostaglandin F2a." B. Lindblom, M. Hahlin, P. Lundorff, and J. Thorburn. *Fertility and Sterility* 54:404-408, September 1990.

In the last 20 years, the number of ectopic pregnancies which have been recognized has increased dramatically. This may be partly due to the fact that the test using human chorionic-gonadotropin (hCG) has become more available and sensitive, affecting previously unrecognized ectopic pregnancies. In the past ectopic pregnancies were usually detected after rupture and at least partial resection of the tube was common. Sometimes the tube could be repaired, sometimes not. Lindblom and a group from the University of Goeteborg, Sweden treated 26 cases of unruptured pregnancy by injecting prostaglandin F2a into the affected tube through a laparoscope and into the ovary containing the corpus luteum. The procedure was successful in 24 patients whose serum hCG values went from 2000 to less than 20 IU/L. The other two required surgical intervention. Of the 19 women desiring pregnancy after the procedure, the rate was 90%. Of these, 58% were in the uterus and 32% in the tube. This represents a new approach to ectopic pregnancy in subjects with low hCG titers, indicating a low activity of the trophograhic tissue. [If for whatever reason the blastocyst cannot reach the uterine cavity when it is ready to implant, i.e., at 3.5 days post-conception, an ectopic pregnancy results. The causes may be infectious, either from STDs or tuberculosis or non-infectious, i.e., endometriosis and they may not be determined at all.] Four of the subsequent tubal pregnancies were in the unaffected tube. One woman had an intra-uterine pregnancy ending in spontaneous abortion, later followed by two ectopic pregnancies. Two cases of intra-uterine pregnancy occurred after in vitro fertilization and embryo transfer. The number of months after surgery during which intra-uterine pregnancies occurred was no more than 15 months. The only two conceptions after this observation period were ectopic. [Clearly this approach does less damage to the tube than open surgery.]