

August 1990

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Recommended Citation

Severyn, Kristine M. (1990) "Abortifacient Drugs and Devices: Medical and Moral Dilemmas," *The Linacre Quarterly*: Vol. 57: No. 3, Article 9.

Available at: <http://epublications.marquette.edu/lnq/vol57/iss3/9>

Abortifacient Drugs and Devices: Medical and Moral Dilemmas

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Introduction

The practice of medicine has traditionally been devoted to healing and improvement of health by the prevention, cure, and management of disease. In recent years, this goal has been obscured with the widespread practice of surgical abortion-on-demand and the use of drugs and devices which cause destruction of the unborn baby (embryo or fetus).

The prescribing of abortifacient drugs and devices by physicians conflicts with the generally accepted code of medical ethics, as outlined in the Hippocratic Oath:¹

I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect. Similarly, I will not give to a woman an abortive remedy.

Since abortifacient drugs and devices carry a federal legend, i.e., "prescription only," the pharmacist has become linked to the dispensing of drugs which cause death of the unborn child.

This paper reviews the currently marketed and investigational abortifacient drugs and devices and discusses the impact of these drugs and devices on health care personnel.

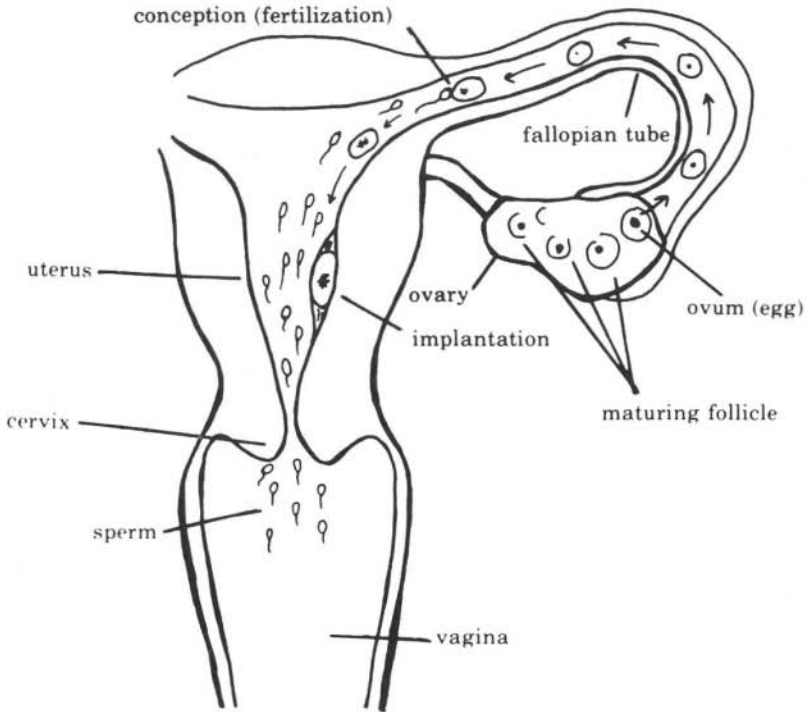


Figure 1. The process of becoming pregnant (Reprinted with permission. Kippley, J. and S. *The Art of Natural Family Planning*, ed. 3, Couple to Couple League, Cincinnati, 1984)

Basic Reproductive Physiology

Figure 1 presents a simplified view of the female internal reproductive organs.

Eggs, or ova, develop in ovarian follicles for release approximately once a month, in a process called ovulation. Most women release only one egg per cycle. After ovulation the ovum travels from the ovary into the Fallopian tube. If sexual intercourse (coitus) has occurred, the sperm travel through the opening of the uterus, the cervix, through the uterus and into the Fallopian tubes, where fertilization of the ovum occurs.

Following ovulation the ovarian follicle becomes the corpus luteum (Latin, "yellow body") and secretes the hormone progesterone. Progesterone maintains the lining of the inner wall of the uterus, the endometrium, in preparation for pregnancy. If the egg has been fertilized

with sperm, it implants in the endometrium five to nine days following fertilization. The fertilized egg then produces a hormone called Human Chorionic Gonadotropin (HCG) which stimulates the corpus luteum to continue producing progesterone, thus preventing the sloughing of the endometrium in menstruation. (HCG is the substance which is detected in most pregnancy tests.) This HCG-stimulated production of progesterone by the corpus luteum will continue for several months, until the placenta begins production of progesterone.

Abortifacient Drugs and Devices

1. Sodium Chloride 20% (Abbott)

This preparation of hypertonic saline is used to induce fetal death and abortion during the second trimester, preferably 16-22 weeks gestation.²

The saline is administered through a large needle which is inserted through the abdominal wall of the mother into the baby's amniotic sac. Prior to injection of the hypertonic saline, amniotic fluid is removed, and an equivalent volume of saline is replaced into the amniotic sac ("saline amniocentesis"). Over the next several hours the baby breathes and swallows the saline, is poisoned, which results in struggling and sometimes convulsions of the baby. About 24 hours after administration of the saline, the mother usually begins labor and will deliver a dead baby.³

This method of abortion is sometimes termed "salt poisoning" abortion, due to the mechanism of action of the chemical. Acute hypernatremia, or salt poisoning, with generalized vasodilation, edema, congestion, hemorrhage, and shock lead to the death of the baby.⁴ Additionally, the corrosive salt solution often burns the baby's skin, resulting in the outer skin layers being stripped away.

Extrapolation of Centers for Disease Control figures indicates that approximately 22,000 saline induced abortions were performed annually in the United States in the few years preceding 1983.⁵ However, the sole producer of 20% saline, Abbott Laboratories, has recently ceased production of this product.⁶ Some feel that this decision is the result of boycotts of Abbott's monoclonal antibody pregnancy tests by over 2,000 independent pro-life crisis pregnancy centers, e.g., Heartbeat, Birthright (USA), and those operated by the Christian Action Council.⁷

2. Prostaglandins

This class of autacoids is one of the most ubiquitous in the body, with a wide variety of physiological actions on various tissues and systems. Of interest here are the effects which prostaglandins exert on the uterine musculature, specifically those found most abundantly in the uterus, menstrual, and amniotic fluid, the E and F types (PGE₂ and PGFs).

The uterine musculature in the pregnant woman becomes more responsive to the contractile stimulating properties of PGE₂ and the PGFs. It is also known that in the pregnant woman the prostaglandin concentrations rise in maternal and umbilical cord blood, and in amniotic fluid.^{8,9}

Unfortunately, these naturally occurring substances (prostaglandins) which have the physiological purpose to facilitate the birth of a baby, can also be used medically to kill the same baby by abortion.

The prostaglandin preparations with the licensed indication for use in mid-trimester abortion are carboprost tromethamine, dinoprost tromethamine, and dinoprostone, all manufactured by Upjohn.

Carboprost tromethamine (PROSTIN/15M; name changed to HEMABATE in December, 1988¹⁰) is a solution containing 0.25 mg of carboprost (15-methyl PGF₂α) per ml for intramuscular injection and is recommended for abortion at 13-20 weeks gestation, or for refractory postpartum uterine bleeding. Dinoprost tromethamine (PROSTIN F2 ALPHA) is a solution containing 5 mg of PGF₂α per ml for intraamniotic injection and is indicated to induce abortion at 16-20 weeks gestation. (Upjohn ceased production of this product in 1988; however, stock is still available in various hospitals or from drug wholesalers.¹⁰) Dinoprostone (PROSTIN E2) is available as a vaginal suppository containing 20 mg of PGE₂ and is recommended for abortion at 12-20 weeks gestation.^{8,9,11}

Since these prostaglandins do not have a direct toxic effect on the unborn child, it is not uncommon for a baby to be aborted who is still alive, especially in later gestational ages. This has been reported as a "complication" of prostaglandin abortions. These live babies are either left to die, or are purposely suffocated.

A recently licensed orally active synthetic analogue of PGE₁, misoprostol (CYTOTEC, Searle) inhibits gastric acid secretion, having as its approved use the treatment of gastric ulcers, and as an adjunct in patients on long-term therapy with non-steroidal anti-inflammatory agents.^{12, 13}

National pro-life groups were unsuccessful in efforts to see that misoprostol did not receive FDA approval for use in the U.S. These efforts were based on the common and serious side-effect of misoprostol to cause a chemical abortion at low doses. The manufacturer of misoprostol, G. D. Searle, will be required to post a warning on its packaging that the drug can cause miscarriages when taken by pregnant women, and that physicians should test women for pregnancy before prescribing misoprostol.¹³

The prominence of this warning is of grave concern to the pro-life community due to the certainty that the drug will be used by women as a "do-it-yourself" abortion. It has been suggested that misoprostol will become a street drug because there are no other specifically abortifacient drugs which are effective perorally.¹⁴ With regard to the possibility of physicians prescribing misoprostol for the unapproved use of causing an abortion, a Searle spokesman has stated that there was "nothing" to prevent physicians from using CYTOTEC to cause an abortion, if it is available on the U.S. market.¹⁵

3. Intrauterine Devices (IUD)

The IUD is a foreign body, usually made of a non-reactive plastic, which

is inserted into the uterus for birth control purposes. Some of the devices are impregnated with progesterone (PROGESTASERT, Alza) or copper (CU-7, Searle), which increases the efficacy of the IUD.

It is hypothesized that there are two mechanisms by which the IUD prevents pregnancy. One is by alteration of sperm motility, and the other is by prevention of implantation of the fertilized ovum, both mechanisms due to a so-called "foreign body reaction," or inflammation, within the uterine cavity. More reports substantiate the latter mechanism of action, i.e., abortifacient. The IUD does not seem to interfere with the menstrual cycle or ovulation.¹⁶⁻¹⁸

The IUD can cause serious complications, including, hemorrhage, pelvic infection, and perforation of the uterus, all having the potential to produce permanent sterility or death. In fact it is advised that a woman who may wish to bear children in the future should not use an IUD.¹⁹

A. H. Robins, the manufacturer of an early IUD, the DALKON SHIELD, declared Chapter 11 bankruptcy in August, 1985 to protect itself from women seeking substantial monetary damages because of medical complications related to their use of the IUD. Prior to the recent merger of A. H. Robins with American Home Products, a federal judge required Robins to appropriate \$100 million which would cover administrative costs of a "DALKON SHIELD Trust Fund", which is expected to grow to \$2.48 billion. This fund would help compensate approximately 200,000 women who have filed lawsuits against A. H. Robins, claiming they experienced severe, and often permanent, adverse effects with the DALKON SHIELD.²⁰⁻²¹

Similarly, women using other brands of IUDs have filed lawsuits against those manufacturers. G. D. Searle was recently ordered to pay \$8.7 million in damages to a woman who suffered "infertility, illnesses, and 'great pain and suffering and mental anguish'" from its Copper-7 IUD. This case was one of 800 lawsuits filed across the U.S. relating to this product, with an additional 1,000 cases being previously settled. Searle was found "negligent" in failing to notify the Food and Drug Administration about what the company allegedly knew were potentially serious health risks with their product. Internal company memos helped to support these assertions.²²⁻²⁵

A new copper impregnated IUD (COPPER T 380 A, ParaGard, GynoPharma) was introduced to the U.S. market in June, 1988.²⁶⁻²⁷ At the time that this IUD was introduced, the PROGESTASERT (Alza) was the only IUD available in the U.S., since other manufacturers had removed their IUD's from the U.S. market in 1985 and 1986 to avoid possible litigation.²⁸ Potential users of this new copper IUD will be required to sign a seven-page informed consent form before insertion of the IUD. Alza currently requires this of its PROGESTASERT users.²⁹

4. Oral Contraceptives ("The Pill")

The most popular type of oral contraceptive is the combination

preparation which contains a synthetic estrogen and progestin. Various products and manufacturers are available.³⁰ A woman is instructed to take one tablet a day on days 1-21 of her cycle. On the remaining cycle days (22-28) the woman experiences withdrawal bleeding.

These preparations exert their high degree of contraceptive effectiveness in three ways:

1. The estrogenic component inhibits FSH (follicle stimulating hormone) secretion from the pituitary, while the progestin inhibits the release of pituitary LH (luteinizing hormone). These actions have the individual and combined effect of preventing ovulation.³¹

2. In the woman who is taking oral contraceptives, the cervical mucus is thick and hostile to sperm. This is in contrast to the normal, healthy cycling woman whose cervical mucus is thin, watery, and abundant in quantity just prior to ovulation. The latter type of cervical mucus is conducive to longer sperm life and sperm migration, i.e., motility.^{32,33}

3. The third effect of combined oral contraceptives is to alter the endometrium in such a way that implantation of the fertilized egg (new life) is made more difficult, if not impossible. In effect, the endometrium becomes atrophic and unable to support implantation of the fertilized egg.^{34,35}

At this point one may question the importance of the second and third actions of oral contraceptives if ovulation is inhibited. Why are these subsequent actions important?

Inhibition of ovulation was nearly 100% efficient with the early oral contraceptives which contained a larger dose of estrogen. Reports, which associated the estrogen component of the preparations with serious thromboembolic and cardiovascular disorders, resulted in the marketing of the "low-dose" combination oral contraceptives. These contain a lower dose of estrogen. Several years of widespread use of the low-dose preparations have indicated that the cardiovascular risks are reduced with the use of the low-dose products, but they are not eliminated.^{35,36}

Unfortunately, the lower estrogen dose allows an increased incidence of breakthrough ovulation, specifically in 2-5% of cycles.³⁷ However, the alteration of the endometrium, making it hostile to implantation by the fertilized egg, provides a back-up abortifacient method to prevent pregnancy. This is the basis for which selected pro-life organizations object to the use of oral contraceptives.

In a press release dated April 14, 1988³⁸ the U.S. Department of Health and Human Services announced that the three manufacturers of high-dose (75-100 μ g), estrogen combination oral contraceptive pills had agreed to remove these drugs from the market. All the remaining combination oral contraceptives will contain a smaller dose of estrogen (30-50 μ g), the so-called "low-dose" preparations. Consequently, all currently marketed oral contraceptives have the potential to cause abortion as a mechanism to prevent pregnancy. Despite the use of low-dose combination oral contraceptives, breakthrough ovulation does occur, and pregnancies have

resulted.³⁹

A second type of oral contraceptive, which is not used to the same extent as the combination type, is the preparation which contains a progestin alone, the so-called "Minipill." The active ingredient is either 0.35 mg norethindrone (MICRONOR, Ortho; NOR-QD, Syntex) or 0.075 mg norgestrel (OVRETTE, Wyeth). These preparations were marketed as safer alternatives to the combination, estrogen-containing oral contraceptives.

The primary mechanism of action of the progestin-only oral contraceptives to prevent pregnancy is to cause endometrial atrophy, thus making it unlikely that the fertilized egg will implant in the uterine wall. The quality of cervical mucus and the incidence of ovulation may or may not be altered.^{31,40,41}

The numerous risks of oral contraceptives will not be detailed here. All physicians and pharmacists are aware of these risks, due to the U.S. government requirement that a Patient Package Insert be dispensed with each package of birth control pills. However, recently released studies associate oral contraceptive use with an increased risk of breast cancer.⁴²⁻⁴⁴ A Food and Drug Administration (FDA) panel voted Jan. 5, 1989 not to revise the warning labels on oral contraceptives, but that further study would be needed on this subject.

A contraceptive skin patch is being developed by Cygnus Research Corporation. The patch would deliver an estrogen and progestin for transdermal absorption, thus avoiding first-pass metabolism. Clinical trials of this preparation are expected in late 1989.⁴⁵ Due to the lower doses of hormones in this investigational product, it is assumed that it will also have the potential to cause abortion in a small number of cycles, in a manner similar to the other combination oral contraceptives.

5. Long-Acting Progestins

Medroxyprogesterone acetate (DEPO-PROVERA, Upjohn) is the only product currently licensed in the U.S. in this category. A dose of 150 mg is injected intramuscularly once every three months.

The FDA-authorized labeled indication for this product is to treat inoperable and metastatic endometrial or renal carcinoma. Due to its potential for causing side effects and permanent infertility, the drug is not authorized by the FDA as a contraceptive. However, this unlabeled use persists. The manufacturer of DEPO-PROVERA, Upjohn, is currently involved in litigation for severe side effects which allegedly occurred from use of this drug.⁴⁶

A preparation of levonorgestrel (NORPLANT, Wyeth), formulated within six one-inch polydimethylsiloxane capsules, is currently being tested by the Population Council in New York for potential marketing in the U.S. Based on early clinical trials the drug would be administered subdermally through a 10 or 11 gauge trocar in a fan-shaped pattern into a 3 mm skin incision. Contraceptive effectiveness would be for up to five

years.⁴⁷⁻⁵⁰

Two preparations of long-acting progestins, in combination with estrogens, which are administered by intramuscular injection every two to six months are dihydroprogesterone acetophenide with estradiol enanthate (DELADROXATE, Squibb) and medroxyprogesterone acetate with estradiol cypionate (CYCLOPROVERA, Upjohn). Although widely used in foreign countries, they are not available in the U.S.

Other investigational injectable progestins are chlormadinone and norethisterone enanthate.

The so-called vaginal rings, which contain either norethisterone, levonorgestrel, or progesterone in various dosage forms, release hormone on the days in which they are in the vagina, cycle days 5-25, after which time the ring is removed to allow for withdrawal bleeding.⁵¹

One mechanism of action of long-acting progestins is to block implantation of the fertilized ovum, similar to the progestin-only oral contraceptives.^{18,35}

6. Anti-Progesterones

Anti-progesterones are a new class of investigational, so-called contraceptives. In reality they are abortifacients. The drugs in this class include mifepristone (RU 486; Roussel-Uclaf) and Epostane (Sterling).

Contraceptive research has turned to this type of compound in the search for a "once-a-month" birth control pill. The goal is to find a preparation which terminates pregnancy within the first five weeks after fertilization, but would be safer to use than combination oral contraceptives. For these reasons, inactivation of the corpus luteum (i.e., anti-progesterone) would be the preferred mechanism of action.⁵²

Since mifepristone is closer to being marketed in the U.S. than Epostane, more detail will be devoted to it in this discussion.

Mifepristone (RU 486)

Acting as a competitive progesterone antagonist at the receptor level^{53,54} mifepristone acts to prevent the implantation of the fertilized ovum into the endometrium. If implantation has already occurred, the uterine lining deteriorates, and the baby is lost during menstruation.

In addition to producing abortion by effecting a hostile endometrium for the unborn child, mifepristone softens the cervix and promotes uterine contractions, facilitating expulsion of the new life.^{55,56}

Mifepristone is correctly referred to as a "contragestive" ("contra"=against; "-gestive"=pregnancy), i.e., abortifacient. It is intended for use within the first 10 weeks of pregnancy, or eight weeks after fertilization.

Initial researchers proposed a dosage schedule of a few days every month. If the woman was pregnant, the baby would be aborted "naturally" in a menstrual period. If the woman was not pregnant, but her egg had been fertilized and was on its way to the uterus for implantation, mifepristone would cause the endometrium to become hostile to implantation. (Recall that progesterone is necessary for maintenance of

the endometrium during the time between ovulation and menstruation in the non-pregnant woman, and during early pregnancy in the pregnant woman). Mifepristone does not prevent ovulation or fertilization.

Mifepristone was licensed for use in France and China in September, 1988. French authorities have stipulated that abortion with this drug must be under the supervision of medical specialists in one of 350 hospital clinics to whom the drug will be distributed.

The abortion method includes three phases. The first phase is administration of three-200 mg mifepristone tablets (costing the French equivalent of \$80.00) at a clinic. One and one-half to two days later the woman returns to the clinic for prostaglandin administration, either by injection or vaginal suppository. (Reports on clinical trials in Europe have stated that sulprostone (Schering A. G. of Berlin, W. Germany) was the prostaglandin used, which produces strong uterine contractions.) The third phase in the abortion procedure involves a return visit to the clinic to verify that the embryo has been completely expelled. If the abortion was incomplete, a dilatation and curettage would be performed.⁵⁷⁻⁵⁹

Clinical testing in the U.S. is being conducted at the University of Southern California (USC). Thirty women have received the combination of mifepristone and prostaglandin injections. These tests are described as a "second-stage FDA trial to determine correct dosage at different weeks of pregnancy."

The investigators at USC were reported to say that their work is being funded by the Population Council in New York. However, a representative of the Population Council was quoted as saying that past research on mifepristone at USC has been funded, but that the current work is not being funded by the Council.⁶⁰

The most serious adverse effect of mifepristone is heavy, prolonged bleeding, which can be as little in quantity as about three times an average menstrual period, lasting for two weeks, similar to an uncomplicated miscarriage, or can last as long as four to six weeks. A small number of women have required blood transfusions.⁶¹ While this bleeding should not present a serious problem in the present, tightly-controlled use in France and China, once this drug reaches use in Third World countries, these controls will no longer exist. A poor woman in these countries would most probably receive mifepristone, and return home to her remote village, where medical care and availability of transfusions are absent.

A second complication of mifepristone use is that its abortive effectiveness is only 80-95%. There are questions whether unborn babies who survive attempted abortion with mifepristone will develop normally throughout the remainder of their gestation, or, if the introduction of mifepristone by the pharmaceutical industry could make the thalidomide experience seem small by comparison.⁶²

A highly-publicized chain of events occurred in October, 1988 concerning the manufacturer of mifepristone, Roussel-Uclaf. On Oct. 21 the company's management committee voted to suspend distribution of

the drug, fearing boycotts and damage to employee morale. On Oct. 26, the company informed the press of its decision to remove mifepristone from the market, only four weeks after it had been approved for use.

Within two days, the French Health Minister ordered Roussel-Uclaf to reverse its decision to remove the drug, threatening the company with transfer of the patent for mifepristone to another company. The government of France owns a 36.25% financial share of Roussel-Uclaf, and is authorized to make such transfers "for the public good." Pressured by this threat, and a petition of over 2000 signatures obtained at the then convened World Congress of Gynecology and Obstetrics in Rio de Janeiro opposing Roussel's decision to cease production of mifepristone, the company reversed its decision, and resumed distribution of the drug.⁵⁸

Some involved in mifepristone research refer to the drug as a medical "menstrual regulator", which tends to mask its abortifacient mechanism of action. Other misleading terms, intended for the lay public, to describe mifepristone and other investigational abortion-causing drugs are: antiprogestin, contragestion, menses regulator, menses inducer, postcoital contraception, interceptive contraception, and post-fertilization anti-fertility.

Newspaper reports have indicated that sometime in the early 1990s the U.S. can expect marketing of mifepristone. Roussel-Uclaf, however, is having difficulty finding an American company to shoulder the potential liability from introduction of this product. In an April, 1987 letter to Pharmacists for Life, the assistant director of the Scientific Services Department of Hoechst-Roussel Pharmaceuticals Inc. stated:

In accord with our contracts, Roussel-Uclaf had offered Hoeschst Roussel Pharmaceuticals Inc. the option for RU 486 in the U.S. We have declined that option. As to whether Roussel-Uclaf will license another pharmaceutical company to market RU 486 in the U.S., we do not know. But we can assure you the Hoeschst-Roussel Pharmaceuticals Inc. will not be involved with this compound.

Due to the past funding of mifepristone research in the U.S. by the New York-based private research center, the Population Council, there have been reports that the drug would be marketed by a company which would shoulder the liability and predictable protests and boycotts by the pro-life community. For example, it has been stated that GynoPharma was created for the marketing of the Copper T 380 A IUD for the Population Council.⁶³

Similar to concerns about misoprostol, there have been concerns expressed about the potential "black market" for mifepristone.^{64,65} It has already been reported that, under recently adopted FDA guidelines, mifepristone may be purchased from overseas sources for use in the U.S.⁶⁶

Epostane

A second investigational anti-progesterone drug is Epostane. While both mifepristone and Epostane are anti-progesterones, their mechanisms

of action are different. Whereas mifepristone works at the level of the progesterone receptor, Epostane is a competitive inhibitor of 3beta-hydroxysteroid dehydrogenase, the enzyme which converts pregnenolone to progesterone.^{67,68}

Epostane, taken perorally, has been recommended for use in conjunction with a prostaglandin (PGE₂) vaginal suppository to cause abortion. Since Epostane lowers the blood levels of progesterone, thereby making the uterus more sensitive to the action of prostaglandins, investigators hope that this combination will decrease the amount of prostaglandin which is needed for abortion. This is "desirable" for the patient because the side effects of the prostaglandin, e.g., uterine pain and gastrointestinal upset, will be avoided.⁶⁹

Marketing of Epostane in the U.S. does not appear imminent. Sterling Drug Company, the owner of Epostane, has recently been acquired by Eastman Kodak. In a letter to the president of Pharmacists for Life, dated Jan. 16, 1989, the Director of Communications for Sterling Drug Co. has written:

Approximately two years ago, the Sterling Board of Directors decided that Epostane was not consistent with the company's goals and clinical trials were terminated, including any you may have seen referred (to) recently in the scientific or lay literature.

Accordingly, Sterling will not develop or license this compound for human use. We will not supply material for clinical trials. We are not doing, nor do we intend to initiate, any research in this area.

7. Abortion Vaccine

The Task Force on Birth Control Vaccines of the World Health Organization Special Program of Research, Development and Research Training in Human Reproduction is sponsoring human testing of an anti-HCG vaccine. The mechanism by which this vaccine would cause abortion is by destruction of the hormone (HCG) which the fertilized ovum (unborn baby) produces to signal the corpus luteum to continue to produce progesterone. Again, there is seen an anti-progesterone type of effect, i.e., preventing implantation of the fertilized egg into the womb. Sandoz Pharmaceuticals has acted as partial financier of this new vaccine.⁷⁰

Conscience Clause

Due to the marketing, and introduction, of new abortion-causing drugs, a serious dilemma has arisen for the pharmacy profession. Since human life begins when the male sperm and female ovum unite, a pharmacist who has convictions that destruction of this human life is wrong may find him-/herself unable to work as a pharmacist, without serious compromise of his/her moral and ethical standards. Could a pharmacist be fired for refusing to dispense oral contraceptives in a retail setting, or PGF₂ α in a hospital setting?

The first situation has already occurred. An April 10, 1987 article in the *Montreal Gazette* (Associated Press) carried the headline: "Two pharmacists fired for refusing to dispense the Pill on moral grounds." The pharmacists were employed at Safeway stores, and were indeed fired for refusing to dispense oral contraceptives. Fortunately, the two pharmacists have been able to gain employment at other locations, but are now required to commute considerable distances from their homes.

Several pharmacists around the country who operate their own pharmacies have already stopped dispensing oral contraceptives. This is a courageous move for an independent businessman. Several of these pharmacy owners have sent letters to their customers explaining their decision.

The 1973 *Roe vs. Wade* U.S. Supreme Court decision, which legalized abortion (throughout the entire nine months of pregnancy) in all 50 states was based on a purported "right to privacy". We were told that the decision for a woman to kill her unborn child would now be a "private" matter between her and her physician.

In the 16 years, and over 24 million unborn babies killed in the U.S. alone, since 1973, it is evident that abortion is not private. First, those wanting abortions wanted others to pay for them, through health insurance premiums or taxes. Second, nurses in hospitals were being forced to assist in abortion procedures, for fear of losing their jobs. Likewise, medical students and residents were being coerced into performing abortions. In fact, some U.S. medical schools and hospitals required that all physicians who desired positions as obstetrical residents must be willing to perform abortions. The Civil Rights Restoration Act (Grove City), passed by the U.S. Congress in early 1988, would have also required all hospitals and medical schools to perform abortions if the institutions received any federal funds, if not for the addition of an amendment which was added to make the Act "abortion-neutral".

At the present time pharmacists seem to be most at risk to lose their jobs for refusing to take part in abortions, when compared to other health care professionals. A national pro-life pharmacists' organization, Pharmacists for Life, has drafted the "Model Pharmacist's Conscience Clause", which is being submitted to professional associations, employers, and state pharmacy boards for possible adoption. The text of this clause appears below:

Any person being a duly licensed pharmacist, who shall object on personal, ethical, moral or religious grounds, to the performance of any act or omission of any act in the normal course of professional dispensing or performance, rights of conscience will be respected.

Further, such a refusal to perform any act or the omission of any act based upon such a claim of conscience, shall not form the basis of any claim for damages or any recriminatory or discriminatory action against such person.

Any such person making such a claim of conscience, or who states a willingness or intention to make such a claim of conscience, shall not be denied employment, or terminated from employment, or discriminated against in any manner related to employment because of such a claim of conscience.

The Center for the Rights of the Terminally Ill is another organization to recently draft a "Resolution to Protect the Rights of Conscience of Health Care Personnel."⁷¹

Section 4731.91 of the Ohio Revised Code currently protects nurses, physicians, and institutions in their right to refuse participation in abortion procedures. Only a test court case will determine if such a law also applies to registered pharmacists.

Based on the dismissal of the two pharmacists in the state of Washington, pharmacists need such a conscience clause in their employment contracts, which will protect them from being terminated from their jobs for refusing to dispense drugs which kill unborn children. Nurses and physicians are now able to be excused from involvement in abortion procedures.^{72,73} Pharmacists should have this same right.

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Table 1
MEDICAL ABORTIFACIENTS

<u>Category</u>	<u>Generic Name</u>	<u>Trade Name</u>	<u>Manufacturer</u>
1. Salt	Sodium chloride 20%	-----	Abbott ¹
2. Prostaglandins	Dinoprost tromethamine	PROSTIN F2 ALPHA ¹	Upjohn
	Dinoprostone	PROSTIN E2	Upjohn
	Carboprost tromethamine	PROSTIN 15/M (name changed to HEMABATE, December, 1988)	Upjohn
	Misoprostol	CYTOTEC	Searle
	Sulprostone ²	-----	Schering A.G. (Berlin, W. Germany)
3. Intrauterine Devices (IUD)		CU-7 ³	Searle
		Tatum-T ³	Searle
		PROGESTASERT	Alza
		Lippes Loop ³	Ortho
		COPPER T 380A (ParaGard)	GynoPharma
4. Oral Contraceptives	A. Combination Type (May cause abortion in a small number of cycles.)		
	<p align="center">Estrogen Component: mestranol or ethinyl estradiol</p> <p align="center">Progestin Component: norethynodrel, norethindrone, norethindrone acetate, ethynodiol diacetate, or norgestrel</p>	ENOVID, OVULEN, GYNEX, DEMULEN, NORETHIN E and M,	Searle
		NORINYL, BREVICON TRI-NORINYL	Syntex
		GENORA	Rugby
		ORTHO-NOVUM, MODICON	Ortho
		OVCON	Mead Johnson
		NORLESTRIN, LOESTRIN	Parke-Davis
		NELOVA	Warner-Chilcott
		OVRAL, NORDETTE, LO/OVRAL, TRIPHASIL	Wyeth
		LEVLEN, TRI-LEVLEN	Berlex

¹ Manufacturer ceased production in 1988.

² Not licensed in U.S.; used with mifepristone to increase complete abortion rate from 80% to 95%.

³ Not available in U. S.

Table 1
MEDICAL ABORTIFACIENTS
(cont)

<u>Category</u>	<u>Generic Name</u>	<u>Trade Name</u>	<u>Manufacturer</u>
Oral Contraceptives (cont)	B. Progestin- Only ("Minipill")	Norethindrone	Ortho
			MICRONOR
		NOR-Q.D.	
	Norgestrel	OVRETTE	Wyeth
Long-Acting Progestins	Medroxyprogesterone acetate	DEPO-PROVERA	Upjohn
	Levonorgestrel ³	NORPLANT	Wyeth
	Dihydroprogesterone acetophenide with estradiol enanthate	DELADROXATE ³	Squibb
	Medroxyprogesterone acetate with estradiol cyprionate	CYCLOPROVERA ³	Upjohn
	Chlormadinone ^{3,6}	-----	-----
	Norethisterone ^{3,6} enanthate	-----	-----
	Vaginal rings containing norethisterone, levonorgestrel, or progesterone in various dosage forms ^{3,6}	-----	-----
Anti-Progesterones	Mifepristone ⁴	RU 486, investigational name; MIFEGYNE, tradename	Roussel-Uclaf (Paris, France)
	Epostane ⁵	-----	Sterling (Eastman Kodak)
Anti-HCG Vaccine ⁶	-----	-----	World Health Organization, primary sponsor; Sandoz is partial financier

³ Not available in U.S.

⁴ Investigational in U.S. Licensed in September, 1988 for use in France and China.

⁵ Not available in U.S. Manufacturer does not intend to market for human use.

⁶ Investigational

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