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Rape Protocol

by

Eugene F. Diamond, M.D.

The occurrence of forcible rape is an event which appropriately calls forth an intense emotional climate of condemnation for the perpetrator and sympathy for the victim.¹ There has been a salutary change in the attitudes of society toward this crime of violence, including well-organized measures to improve the aftercare of the rape victim. Most states have statutes which require hospitals to establish written protocols for the care of rape victims particularly in emergency room settings. This has created conflicts for Catholic institutions with regard to the recommendation for the use of so-called "morning-after" pill in rape protocols.² The conflict relates to the action of hormones (large doses of estrogen or estrogen-progestogen combinations) given during the post-rape period and the intentionality of the health care provider in dispensing the hormones or referring to agencies which will provide them. The crux of the matter is whether the "morning-after" pill is an abortifacient through its effect in preventing implantation or whether it can be a contraceptive through an effect of preventing ovulation when given early in the cycle.

Contraception Following Rape

The essentially immoral character of contraception is its "failure to preserve the full sense of mutual self-giving and human procreation" (*Gaudium et spes* 51). The wrongfulness of contraception has to do with a decision to bring oneself into sexual union with another person and another decision positively to preclude the transmission of new life (*Familiaris Consortio* 32). The woman who has been raped has not made the free choice of sexual union, and she is, therefore, free to attempt to neutralize the effects of the assault which violated her bodily integrity. In a practical sense, this might involve attempts to prevent sperm transport or sperm capacitation or to suppress ovulation.

Abortifacient Effects

"Morning-after" pills given to a woman who has already conceived as a result of forcible rape will alter the tubal transport of the zygote and will interfere with the implantation of the blastocyst.³ The prevention of implantation is an abortifacient effect, and abortion is no less immoral and repugnant when it occurs

in the earliest stages of intrauterine development. There have been attempts to redefine "contraception" to include the prevention of implantation by declaring the stages between fertilization and implantation to be "pre-embryonic". The American College of Obstetrics and Gynecology defines pregnancy as beginning with implantation, but this manipulation of language is not related to modern scientific understanding so much as the need to fulfill a political agenda.

During the period between fertilization and implantation, the embryo independently controls a sequence of events which are critical to its survival. The single-cell zygote divides and differentiates into a cluster of cells. The outer layer of cells secretes chorionic gonadotropin and develops the capacity to adhere and invade the endometrial lining. Drugs which interfere with these stages of human development are abortifacients, not contraceptives.

Postcoital Contraception

A statement approved by the British Bishops⁴ attempts to refine the issue by distinguishing the effects of estrogen or estrogen-progestogen combinations depending on the stage in the menstrual cycle at which they are administered. The statement distinguishes three stages:

- 1) If administered *prior to ovulation*, the effect would be to prevent ovulation and thereby fertilization by producing an anovulatory cycle.
- 2) If administered *just before ovulation*, high doses of hormone may prevent conception by a) immobilizing sperm in the genital tract, b) by preventing capacitation of the sperm, or c) affecting the cells surrounding the ovum during the ovum's own preparation.
- 3) If administered *after ovulation*, the effect, if any, will be abortifacient through a) alteration in the environment of the fallopian tube, b) inhibition of implantation by the creation of a hostile environment in the endometrium and, c) hormonal effects producing shedding of the endometrium and loss of the implanting embryo.

The statement proposes that hormonal postcoital treatment be approved after insemination by sexual assault *provided*: 1) There are no grounds for judging that ovulation preceded or will coincide with the administration of hormones and 2) The postcoital hormone is administered during the first 24-hours after rape.

The statement must be critically examined from two standpoints: 1) whether or not the effects of hormones are truly as stated during the three stages of the menstrual cycle and 2) whether or not the *possibility* of ovulation can be excluded by history given the real-life circumstances of the aftercare of the rape victim.

Suppression of Ovulation Early in the Cycle

The usual measure employed for postcoital contraception is 100 mcg. of Ovral (an estrogen-progestogen combination) followed 12 hours later by a second 100 mcg. dose of Ovral. Since Ovral is manufactured by Wyeth-Ayerst Pharmaceuticals, an inquiry was submitted to the company regarding evidence

that Ovral does, in fact, act as an anti-ovulant in the aforementioned dosage schedule. The company provided references^{5,6,7,8,9} regarding the use of *d l*-norgestrel and ethinyl estradiol (the hormonal components of Ovral) as a postcoital contraceptive.

From the experimental data provided by the manufacturer, it can be inferred that the scientific evidence to support the suppression of ovulation by two 100 mcg. doses of Ovral twelve hours apart is meager and inconclusive. The company does not, in fact, claim such an effect. One recent publication¹⁰ suggests that RU-486 may disrupt follicular maturation, but it is unlikely that the rape protocol of a Catholic hospital would want to recommend this French abortion pill.

1. **Effects on Sperm** — Progesterone changes the quality of the cervical mucus to make penetration by spermatozoa more difficult. According to experimental evidence observed by Klaus,¹¹ however, sperm traverse the cervical mucus at peak phase (time of ovulation) in a period of 90 seconds. Altering the cervical mucus by Ovral given hours after the assault would not preclude free access by sperm to the uterus.

2. **Sperm Transport** — Sperm transport time from the cervical os to the oviduct has been variously estimated.^{12,13,14} The best evidence is that this occurs in minutes, possibly as soon as five minutes after intercourse.¹⁵ It is highly unlikely that postcoital hormone therapy could cause immobilization of all or most of the sperm in time to prevent their access to the tube and thereby fertilization.

3. **Sperm Capacitation** — Sperm Capacitation is the process by which the sperm acquires the capability to cleave to and penetrate the ovum. Although this usually occurs after a period of time in the female genital tract, it is also acquired in the human outside the body such as in *in-vitro* fertilization. Ovral, which contains progesterone can theoretically interfere with capacitation by impeding the release of progesterone which is important in capacitation. Large doses of Ovral could reduce sperm capacitation, but it is unlikely that it could prevent all sperm capacitation prior to their migration and cleavage to the ovum. The numbers of capacitated sperm reaching the ovum would be reduced to the extent determined by the timing of hormone administration.

4. **Tubal Motility** — Large doses of estrogen reduce motility and ciliary action in the oviduct. The timing of this effect in a post-rape situation indicates that it would not interfere with sperm reaching the ovum so much as preventing fertilized ova from moving back down the tube in proper phase for implantation. The two most frequently quoted studies regarding the mechanisms of action of "morning-after" pills are those of Blye¹⁶ and Kuchera.¹⁷ These authors stress the following effects of postcoital agents:

- a. Prevention of tubal transport of the *zygote*
- b. Prevention of embryonic viability
- c. Prevention of sperm transport
- d. Loss of sperm viability
- e. Luteolysis
- f. Prevention of implantation

As Blye states in his article, "it is somewhat rhetorical to include the effects on male gametes here inasmuch as postcoital contraceptive therapy is contemplated

long after spermatozoa have reached the site of fertilization in the female reproductive tract." In summary, then, the logistics of the real life situation of the aftercare of a rape victim are such that the only relevant effect of postcoital hormonal agents is their ability to prevent implantation.

Menstrual History

A key factor in evaluating the use of "morning-after" pills under the guidelines of the British Bishops' report is the woman's ability to provide reliable historical evidence as to how an act of intercourse has been timed in her menstrual cycle. In order to know whether it is licit to use Ovral, the attending physician should be aware of whether the woman is pre-ovulatory, ovulating, or post-ovulatory. How reliable is such historical evidence? A recent study published in the *New England Journal of Medicine*¹⁸ is of interest since all women in the study had laboratory surveillance by way of plasma progesterone and urine pregnanediol levels. This allowed objective laboratory confirmation of the women's subjective statements about their cycles. Fifty-one percent of women who were believed to be in the luteal phase by history had not ovulated. Twenty-one percent of women thought to be pre-ovulatory, by their statements had, in fact, ovulated. The conclusion of this objective hormone assay-controlled study was "most women do not keep records of their menstrual periods and it is well-recognized that *estimated dates are likely to be inaccurate*". Given the uncertainty of information available at the time of treatment, it is unlikely that the standard required by the British Bishops' statement (i.e., "There are no grounds for judging that ovulation preceded or will coincide with the administration of hormones") is achievable with any acceptable degree of certitude.

Risk of Pregnancy After a Single Act of Forcible Rape

Support for the use of postcoital agents is developed from studies done on populations other than rape victims such as women on college campuses who approach student health centers after an episode of "unprotected intercourse". These studies compare the number of pregnancies following postcoital hormone administration with the number expected following a single act of random unprotected intercourse in any menstrual cycle. It has been noted¹⁹ that many of these studies have a methodological error, i.e., using the total number of women in the study as the denominator rather than the number of women actually potentially pregnant. Also using the Tietze²⁰ estimate of the expected incidence of pregnancy following a single act of random unprotected intercourse as 3% may be unrealistically high as compared with that of Pearl (0.3%). However accurate these studies are, however, there is question as to whether the statistics truly apply to the situation of a single act of forcible rape.

In a prospective study of 4,000 rapes in Minnesota, no pregnancies were reported.²² In a retrospective study, the States Attorney of Cook County, Illinois, including Chicago, reported no pregnancies during a nine-year period of prosecutions for rape. Similar retrospective studies done by law enforcement

agencies in Erie County, New York, and Cuyahoga County, Ohio, reported not a single pregnancy following rape in prosecutions covering thirty years in New York and ten years in Ohio.²³ In a prospective study of 117 rapes, there were no pregnancies among the 100 women who received no post-rape hormones.²⁴ While not all rapes are reported, there is no reason to think that pregnancy is more common after unreported rape than it is after reported rape. Some recent studies have helped to shed light on this lower-than-expected incidence of pregnancy following forcible rape.

1. There is a high rate of sexual dysfunction related to sexual assault. Groth and Burgess reported²⁵ that 57% of 101 rapists had erectile or ejaculatory dysfunction.
2. Rape is defined legally as penetration with or without ejaculation. A series of studies²⁶ have reported the recovery of spermatozoa from only about half of rape victims including even victims of gang rape.
3. About 70% of rape victims will be at reduced risk because they are on contraceptives, are pregnant, post-menopausal, pre-menarchal or were surgically sterilized.²⁷

Legal Issues

In the case of *Brownfeld vs. Daniel Freemant Marina Hospital*, [256 Cal. Rptr. 240 (cr. app. second distribution 1989)] a rape victim sued for declaratory and injunctive relief because of the failure of a Catholic hospital where she was treated to provide rape victims with information about and access to estrogen pregnancy prophylaxis in the emergency room. The case was dismissed in the trial court and the decision was upheld on appeal because the plaintiff had claimed no damages as a result of the failure to provide information or access.

In dicta accompanying the decision, the court suggests that Catholic hospitals might have a responsibility to "instruct the patient concerning options for pregnancy prevention" or "to transfer the patient to another facility." No hospital, obviously, is required to cooperate in abortion or to refer for abortion given the protection of State and Federal conscience clauses.²⁸ Catholic hospitals can provide comprehensive services for rape victims through cooperation with Catholic Social Services and consultants from the Catholic Physicians Guilds. The evidence that "morning-after" pills are, in fact, abortifacient is overwhelming and irrefutable.^{29,30,31,32} The use of postcoital hormonal agents is not standard therapy after rape.^{33,34} There is no litigated case in which denial of "morning-after" pills following rape has resulted in a greater risk of pregnancy.

Ethical Issues

It has been suggested by the British Bishops report⁴ that "morning after" pills may be given if there is a doubt as to whether ovulation has occurred. Using the principle of double effect, the "intention" of the person recommending the drug is to prevent ovulation and not to prevent implantation. There are two problems with this rationale. 1) There is formidable evidence that postcoital estrogens do

not prevent ovulation³⁵ and 2) aside from the 10% of Catholics and the 5% of the general population using reliable methods of Natural Family Planning, there would always be an irreconcilable doubt as to whether ovulation has occurred.² The choice then would seem to be between a medication which is either ineffective or contraindicated. As the British Bishops state in their reply to criticisms of their original statement "the upright and informed conscience will not be willing to accept any substantial risk of killing the embryo."³⁶

Other ethical issues have been summarized by Rohlf's³⁷ as follows:

"Some will also defend the use of Ovral by the Principle of Double Effect. The Principle of Double Effect cannot be used in the case of Ovral for several reasons. First, it does not have two effects in a particular instance, but only one or the other of two possible effects. As we have stated earlier, most of the time in a post-rape situation Ovral will do nothing successful as either contraceptive or abortifacient. But, if Ovral does anything successfully, it will be *either* as a contraceptive or as an abortifacient. As we have seen, there does not seem to be any meaningful contraceptive effect which Ovral could have by the time the woman presents herself for post-rape treatment. As a result, if Ovral does anything meaningful from a physiological standpoint, it would be as an abortifacient rather than as a contraceptive in the post-rape context. Second, in the Principle of Double Effect the good effect cannot be obtained in some equally expeditious and effective way without the concomitant evil effect. This aspect of the Principle is clearly violated in the case of the post-rape administration of Ovral since there is virtually no chance of conception occurring in the first place. Thus, not administering Ovral is just as effective as administering Ovral, since its *de facto* effect is that of a placebo. Not administering Ovral is thus "equally expeditious and effective." Third, in the Principle of Double Effect there must be due proportion between the good that is intended and the evil that is permitted. In the calculation for this case, one could hardly state that there is a due proportion exhibited between the possible psychological solace of Ovral administered as a placebo and the possible destruction of an innocent human life in an undetected pregnancy.

It is also common teaching that in a case where a fundamental human value such as human life may be at stake, the safer course is always to be preferred. As we have seen, in all likelihood the woman is not going to become pregnant in the first place. Thus, what reasons could be given for taking any risk of an abortifacient side effect by the administration of the Ovral treatment?

In conclusion, Directive 12 of the Ethical and Religious Directives states that, "Every procedure whose sole immediate effect is the termination of pregnancy before viability is an abortion which, in its moral context, includes the interval between conception and implantation of the embryo." As indicated, it seems that there is no meaningful contraceptive effect postcoital for Ovral or similar treatments. By the time the woman presents herself for treatment, the "sole immediate effect" of Ovral is to render the endometrium hostile to a possible fertilized egg. This is the primary intention with which emergency room physicians prescribe it and the primary intention with which women take it. It is a simple fact that women and emergency room physicians are not usually interested in purely contraceptive devices at this time, even if Ovral were in that

category. It seems disingenuous for Catholic moralists to promote the Ovral treatment for its reputed contraceptive effects when in fact doctors neither prescribe nor do women take it for such purposes in the post-rape scenario.

In making our ethical analysis of the use of Ovral or similar treatments in regards to post-rape scenario, we must take into consideration the possibility of scandal given or scandal taken, or more likely, scandal given and taken. I have yet to contact the non-Catholic physician who would not say that we are using a type of mental gymnastics to maintain that Ovral is truly a contraceptive in a post-rape protocol. If indeed Ovral has realistic contraceptive effects in such a scenario, it is a well kept secret among Catholic physicians. Non-Catholic physicians seem to find our "gnosis" quite bizarre. We do need to consider how those outside the Church will look upon the distinctions that some are trying to make in regards to Ovral. It does appear to many of them that this is nothing more than "loophole theology" in which we appear to be trying to find a way to circumvent our own ethical directives.

Summary

1) Catholic hospitals are required by law in many states to develop protocols for the aftercare of rape.

2) Inclusion of "morning-after" pills in protocols has been justified by some authorities for use in the instance of sexual assault in the pre-ovulatory phase of a woman's cycle.

3) Whereas the abortifacient effect of postcoital estrogen or estrogen-progestogen administration is well established, the anti-ovulatory effect is highly questionable.

4) The historical evidence provided by women as to their menstrual history is not reliable when evaluated by objective hormone-assay controlled methods.

5) Given the logistics of the aftercare of rape victims in hospital emergency room settings, it would not be possible to eliminate the significant probability that postcoital hormone agents would be abortifacient in action.

Appendix I

Proposed Supplementary Procedures to ACOG Protocol for the Examination and Treatment of Victims of Sexual Assault

Time & Date of Examination: _____ Time & Date of Alleged Assault: _____

Time elapsed since alleged assault: _____ Date of LMP _____

Using contraception: Yes No If yes, what _____

Speculum examination. (Obtain all samples required in rape protocol). Then perform postcoital test.

Is/was conception possible or preventable?

spermatozoa present - viable or dead

no sperm seen

Yes

highly unlikely

Cervical mucus has fertile characteristics:
(estrogen effect) slippery, elastic, clear or cloudy.

no mucus, or sticky mucus
(progesterone effect)

no further pregnancy prevention treatment indicated,
only usual anti-STD Rx and counseling Rx indicated.

Obtain blood samples for LH, estrogen and
progesterone levels (tests results will not be available
in less than least 8 hours)

Perform vaginal ultrasound examination
to evaluate presence & size of dominant follicle.

If dominant follicle is seen (>1.5 cm + in diameter,
consider transvaginal aspiration of the ovum from the
follicle under ultrasonic guidance. This requires
special skills and instruments — an IVF or GIFT
needle.

If no dominant follicle is seen, ovulation has passed,
or is not imminent.

Rx: counseling and anti-STD protocol.

If this is attempted by someone who is not a specialist
in egg retrieval and in vitro fertilization there is a
higher probability that the ovum will be spilled into
the peritoneal cavity and become accessible to
spermatozoa and conception [Since in vitro fertiliza-
tion and related procedures are proscribed by *Donum
Vitae* it is not too likely that such specialists would be
found in Catholic hospitals.] As the ACOG Rape
Protocol estimates the risks of conception from rape
to be 2-4% of women who are not already on
contraception, counseling is indicated before attempt-
ing an egg removal/ retrieval procedure. [The
additional expense of the vaginal ultrasound exami-
nation can be viewed in several ways: traditionally,
every procedure is expected to amortize the cost of the
equipment, but since vaginal ultrasound is used
regularly to diagnose, for instance, ectopic pregnancy,
it is already available.]

If there is no trained physician available, an
interventional radiologist can perform the procedure
transabdominally. This would not be done on an
emergency basis. Blood hormone levels would be
available and helpful; on the other hand if ovulation
was imminent, it may have occurred in the interim.

Above algorithm provided by Hanna Klaus, M.D.

Appendix II

Dr. Thomas Hilgers has proposed the following procedure as a research project to evaluate a definitive program to prevent pregnancy after rape.

- A. Upon examining the rape victim, the physician studies the cervical mucus for the presence or absence of ferning. If the fern of the cervical mucus is negative, then there is no need for any further evaluation or treatment. If the ferning is positive, then it suggests that the cervix is being stimulated by estrogen and ovulation is either approaching or is just past. If the ferning is positive, then the physician goes to step B.
- B. The patient with a positive fern then undergoes a pelvic ultrasound examination looking for the presence of a follicle or a recently formed corpus luteum. Also, the evaluation of the endometrium can be undertaken to define whether or not the endometrium is proliferative or secretory. In the presence of a follicle, the physician goes to step C.
- C. With step C, the patient is given a continuous infusion of Gonadotropin Releasing Hormone (GnRH). With a continuous infusion of GnRH the further development of the follicle should be stopped "in its tracks" and ovulation will not occur.
- D. In the case where the ultrasound reveals the corpus luteum, no further treatment would be necessary. It is possible, although very unlikely, that a recently formed corpus luteum would reflect the possibility of pregnancy. At the same time, the possibility does exist that it would reflect an early postovulatory situation where pregnancy might occur but only further evaluation would allow for that consideration to be better defined.
- E. If the patient does become pregnant, then a pregnancy support program should be available since studies and experience do suggest that these patients do as well carrying the pregnancy as they do having had the abortion.

The above research protocol deserves funding from sources such as the Catholic Health Association or the NCCB as a means of resolving some of the controversies.

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