Oral versus vaginal misoprostol for termination of frist trimester missed abortion

Thesis

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Abstract

Aim : *To compare the efficacy, side effects and patient satisfaction between oral 800 microgram misoprostol and vaginal 800 microgram misoprostol in management of frist trimester missed abortion.*

Material and Method : *80 women diagnosed as having missed abortion divided by (sealed envelope technique) into two groups each group contain 40 women. group(A) received 800 microgram misoprostol orally .group(B) received 800 microgram vaginally.*
If no effect appeared after 6 hours the patient received another dose 400mcg . some parameters will be registered as induction evacuation interval, side effects and patient satisfaction to compare between two groups.

Results : *40 patients were randomized to receive 800microgram vaginally and 40 patients were to receive 800 microgram misoprostol orally.* ***In vaginal group****: 4(10%) patients administrated only one dose of 800mcg misoprostol. 3(7.5%) patients got complete abortion and 1(2.5%) patient need surgical evacuation. 36(90%) patients administrated two doses of 800mcg and 400mcg misoprostol. 21(52.5%) patients got complete abortion and 15(37.5%) patients need surgical evacuation. Fever and abdominal pain were the only side effects appeared in the vaginal group. One patient (2.5%) got nausea and 39 patients (97.5%) got abdominal pain.* ***In the oral group:*** *4(10%) patients administrated only one dose of 800mcg misoprostol. 1(2.5%) patients got complete abortion and 3(7.5%) patient need surgical evacuation. 36(90%) patients administrated two doses of 800mcg and 400mcg misoprostol. 27(67.5%) patients got complete abortion and 9(22.5%) patients need surgical evacuation.*
Nausea, vomiting, fever and abdominal pain were side effects appeared in the oral group. 7 patients (17.5%) have got nausea, 3 patients (7.5%) have got vomiting one patient (2.5%) has got fever and 27 patients (67.5%) have got abdominal pain.

Conclusions : *800 microgram of vaginal misoprostol are as effective as 800microgram orally in producing complete abortion in frist trimester missed abortion with less side effects in vaginal group and patient satisfaction more in oral group.*

Keywords : *Frist trimester missed abortion, orally, Misoprostol, vaginally.*

List of Abbreviations

ACA	:	Anticardiolipin antibody
ACOG	:	American college of obstetrics and gynecology
ANA	:	Antinuclear antibody
aPL	:	Antiphospholipid antibody
β hCG	:	Beta subunit human chorionic gonadotropin
BMA	:	British Medical Association
BMI	:	Body mass index
BPD	:	Biparietal diameter
CI	:	Confidence interval
CRL	:	Crown rump length
D and C	:	Dilatation and curettage
DBP	:	Diastolic blood pressure
DIC	:	Disseminated intravascular coagulopathy
DM	:	Diabetes mellitus
FDA	:	Food and drug administration
FL	:	Femur length
Hb	:	Hemoglobin
hCG	:	Human chorionic gonadotropin
HIV	:	Human immunodeficiency virus
HLA	:	Human leucocytic antigen
IAI	:	Induction abortion interval
ICI	:	Induction contraction interval
IDI	:	Induction dilatation interval
IP3	:	Inositol triphosphate
IUFD	:	Intrauterine fetal death
IUGR	:	Intrauterine growth retardation
IVF	:	In-vitro fertilization
LAC	:	Lupus anticoagulant
LH	:	Luteinizing hormone
LMP	:	Last menstrual period
MVA	:	Manual vacuum aspiration
NS	:	Non significant
NSAID	:	Non steroidal anti inflammatory drugs

List of Abbreviations (Cont.)

OR	:	Odds ratio
P/V	:	Per vagina
PCO	:	Polycystic ovarian syndrome
PGE1	:	Prostaglandin E1
S	:	Significant
SBP	:	Systolic blood pressure
TLX	:	Trophoblast/lymphocyte cross reactive
TVS	:	Transvaginal sonography

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Introduction

Missed abortion

Definition:

Missed abortion is defined as retention of dead products of conception in uterus **(Cunningham et al., 2001).**

Incidence: Once the fetus is dead, Spontaneous abortion occurs in 80% of women within 2 weeks and only 10% remain undelivered for more than 3 weeks **(Zlatnik, 1986)** interestingly, **Townsend and Shelton (1964)** found evidence of delayed spontaneous labour when the fetal death was due to Rh-isoimmunization, 50% of mothers remaining undelivered after 5 weeks.

Pathogenesis: The reason some abortions do not terminate after fetal death is not clear. The use of potent progestational compounds to treat threatened abortion, however, may contribute to this. **Smith and co-workers (1978)** observed that 73 percent of women with threatened abortion given hormonal treatment did abort, but on the average 20 days later. In women who received no hormonal support, 67 percent aborted at a mean of 5 days **(Cunningham et al., 2001).**

It is possible that normal progestogen production by the placenta continues while the oestrogen levels fall which may reduce uterine contractility. **(Alan et al., 2003).**

If the missed abortion terminates spontaneously, and most do, the process of expulsion is the same in many abortions. If retained several weeks after death, it becomes a shriveled sac containing a macerated fetus **(Cunningham et al., 2005).**

Medical management has recently been explored as an alternative for management of miscarriage. Several studies have examined the efficacy of prostaglandins with or without mifepristone. Due to differences in selection criteria, choice and different criteria for diagnosis of complete miscarriage, it would be desirable to develop a regimen

without mifepristone since it is expensive and is not available in many countries **(El-Refaey et al., 1995; Tang et al., 2002 a, b).**

Misoprostol is a prostaglandin E1 analogue that has a lower cost, a longer shelf-life at room temperature, and fewer side effects than the prostaglandin E2 analogues **(Templeton, 1998).**

Misoprostol is the prostaglandin of choice as it also has various routes of administration including oral, vaginal and sublingual. Misoprostol have been studied for termination of pregnancy in the first trimester **(El-Refaey et al., 1995, Tang et al., 2002 a, b).**

Clinical studies have shown that vaginal is superior to oral misoprostol in termination of pregnancy in the first trimester **(El-Refaey et al., 1995)**

Other methods of management are: surgical evacuation of the uterus which used to be the standard management but is

associated with side effects such as infection, perforation of uterus or asherman's syndrome **(Oi Shan Tang et al., 2003)**

Expectant management of miscarriage is an attractive option. It avoids iatrogenic problems and cost effective, but complete abortion rate is variable depending on the duration of observation **(Nielsen and Hahlin,1995, Jurkovic et al., 1998)**

Aim of the Work

This study aims at comparing the success rate, tolerability and side effects between oral and vaginal 800 microgram misoprostol in the management of frist trimester missed abortion.

Abortion

Loss of pregnancy occurs with decreasing frequency as gestation increases. In the first trimester at least 25 % of pregnancies will end in spontaneous miscarriage. This number may be as high as 43 % of pregnancies diagnosed purely on the raised serum B-HCG (**Miller et al., 1980).**

Current recommendation is that in early pregnancy loss the term abortion should be avoided and more sensitive terminology substituted. Impulsive abortion should be replaced by miscarriage. Blighted ovum, missed abortion or anembryonic pregnancy should be replaced by early embryonic or fetal demise. Incomplete abortion should be replaced by incomplete miscarriage. Recurrent or habitual abortion should be replaced by recurrent miscarriage **(Slemons et al., 2004).**

Terminology

Abortion is the termination of pregnancy by any means before the fetus is sufficiently developed to survive. In the United States this definition is confined to the termination of pregnancy before 20 weeks gestation **(Cunningham et al., 2005)**.

Abortion is defined as termination before 24 weeks of gestation with no evidence of life (United Kingdom legal definition) **(Keith et al., 1999).**

The term abortion is often interpreted by patients to mean induced termination of pregnancy, and this lead some to use the better term miscarriage in cases of spontaneous loss of pregnancy (**Beard, 1985**). However, this view has not yet gained wide spread acceptance.

This has led many groups to reviewing the law and in 1985 the department of Health and Social Security in combination with the Colleges of Obstetricians, General Practitioners, and Midwives, the British Pediatric Association and the British Medical Association published a report on fetal viability in clinical practice which may be summarized as follows:

1) The lower limit of fetal viability should be changed to 24 completed weeks of gestation.

2) All fetuses born alive or dead after 22 weeks gestation or weighting 500gm or more should be recorded**.**

3) If a decision is made to terminate pregnancy thought to be greater than 20 weeks gestation, all reasonable methods to confirm gestation should be used including careful assessment and ulterasound **(David et al., 1984).**

Abortion in historical prospective:

Induced abortion has been described in every culture studied and seems to have existed in some form or another in all those with written records. Ancient Chinese, Egyptian and Greek writings refer to drugs and herbs used for the purpose of inducing an abortion. One of the earliest known medical texts attributed to the Chinese Empror Shen Nug (2737-2696BC) refer to mercury as an abortiofacient **(Varma, 1991).**

The Ebers Papyrus of Egypt (1550-1500BC) contains several prescriptions for abortion and contraception. One abortifacient preparation combined acacia leaves and the plant colocynth, both of which have been shown in laboratory investigation to have certain anti fertility properties **(Riddle, 1992)**.

Elsewhere, in the ancient world, most abortions were attempted through herbal prescriptions. Nonetheless, archaeological evidence reveals that during the Greco-Roman era there were several types of vaginal specula, as well as an apparatus designed to irrigate the intrauterine cavity **(Potts, et al., 1997).**

Specific instruction in abortion through instrumentation is found in the writings of the tenth century Persian physician Al-Rasi. "If these methods (contraceptives has suggested) do not succeed and the semen has become lodged, there is no help for it but that she insert into her womb a

probe or stick cut into the shape of a probe, especially good being the root of the mallow. One end of the probe should be made fast to the thigh that it may go in no further. Leave it there.....wait thus for one or two weeks until gradually the menses appear (**Riddle, 1992**).

In 1981 various techniques were available for inducing abortion. Evacuation of the uterus through the vagina is generally the preferred method in first trimester pregnancies. Dilatation of the cervical canal by inserting rod dilators or laminaria tents allows the withdrawal of the fetus. Suction procedures (vacuum aspiration uterine aspiration, or suction curettage) are possible since the deciduas are separable from the basal layer of endometrium. A canula is introduced into the uterine cavity through the dilated cervix and its operator is then connected to a pump by way of a flexible tube which delivers negative pressure of about 600mm of mercury. When the fetus is withdrawn, the uterus is felt to contract into the canula. The average time for this procedure is 5 minutes. Surgical curettage or dilatation and evacuation first dilate the cervical canal and then remove fetal parts and tissue using ovum forceps; a sharp curette does the rest. Anesthesia for these procedures may be general, local, or spinal **(Hebpurn, 1981**).

In mid-1982, 10% of the world population lived in countries where abortion was prohibited under all circumstances and 18% in countries where it was permitted only to save the mother's life **(Varma, 1991)**.

In UK, the high rate of maternal mortality and morbidity which reached a peak of six per one thousand women in 1933 and to which illegal abortion made an increasing contribution prompted the British Medical Association (BMA) to recommend that abortion should be legalized on the grounds of the physical and mental health of the woman and on social grounds **(Varma, 1991**).

However it was only in 1966 that the medical termination of Pregnancy bill was introduced and this became law in 1967. **The 1967 Act** allowed women to have a legal abortion if two doctors agreed that continuation of the pregnancy was a threat to her life (**Clause 1)** or to her