A comparative Study between Misoprostol and Surgical Management of a first trimester Missed Abortion in terms of Morbidity and cost effectiveness

Thesis

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BY

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- **AB**: Abortion
- **ACOG**: American College of Obstetricians and Gynecologists
- **ANT**: Anterior
- **CRL**: Crown Rump length
- **Cox** : Cyclooxygenase
- **COX2**: Cyclooxygenase 2
- **CX**: Cervix
- **CRH** : Corticotropin-releasing hormone
- **D&C**: Dilatation & currettage
- **D&X:** Dilation & Extraction
- **DP**: Douglas Pouch
- **EVS**: Endo Vaginal Sonography
- **GA**: Gestational Age
- **GS**: Gestational Sac
- **LPD**: Luteal Phase Defect
- **Mg** : medical group
- **MSD**: Mean Sac Diameter
- **PG**: Prostaglandin
- **PGE2** Dinoprostone
- **RPOC** retained products of conception
- **POST**: Posterior
- **PGE**: Prostaglandins E
- **Sg:** surgical group

- **TVS**: Trans Vaginal Sonography
- **U/S**: Ultra sonography
- **UT**: uterus

Introduction

The term “abortion” comes from the Latin word “aboriri” which means “to miscarry”. According to Oxford dictionary, abortion is the premature birth of fetus before a live birth is possible. The National Center for Health Statistics, the Centers for Disease Control and Prevention and the World Health Organization define abortion as pregnancy termination prior to 20 weeks of gestation or with a fetus born weighing less than 500 grams ***(*Cunningham *et al., 2005)***

. Early pregnancy failure is a common event and complicates up to 15% of a clinically recognized pregnancies. Therapeutic options include surgical evacuation of products of conception, expectant and medical management. Surgical treatment has been the method of choice for years and it is also associated with serious complications (e.g. uterine perforation) and increased cost. ***(Alexandro et al., 2008).***

Medical management of early pregnancy failure is an effective and safe alternative to surgical management by dilatation and suction evacuation. ***(Matthew et al., 2008).***

Medical treatment which usually implies systemic and local administration of a prostaglandin analogue is considered promising as it is expected to decrease hospitalization cost and overcome the risk of surgical complications. ***(Alexandro et al., 2008).***

The use of prostaglandins, mainly prostaglandin E1 methyl analogues such as misoprostol, was reported to have achieved success rates ranging from 56% to 89%. ***(Ronit et al., 2009).***

Incomplete medical abortion may, however, increase the risk of infection and has associated with persistent or recurrent vaginal bleeding and pain. ***(Sahar et al., 2008).***

Significant differences of the treatment modalities was reported in terms of complete evacuation and complication rates.
(Alexandro et al., 2008).

The sonographic measurement of endometrial thickness is a useful parameter for diagnosing incomplete first trimester abortion and can be expected to be useful in diagnosing failure after management.
(Sahar et al., 2008).

Missed abortion is the condition in which the fertilized ovum dies within the uterus but is retained in the uterus for unknown reasons. Most of the missed abortions terminate spontaneously. But if there is a delay of 5-6 weeks in expulsion, there is a risk of developing coagulation disorders. Therefore uterus is to be evacuated as soon as the diagnosis of missed abortion is made ***(Mudaliar et al.,2008)***

Misoprostol is a prostaglandin E1 analog that was first marketed in the 1980s to prevent gastric ulcers. Because of its effects on uterin econtractility and cervical ripening, a number of randomized trials

and systematic reviews have evaluated its use in obstetric and gynecologic conditions. Misoprostol is inexpensive, stable at room temperature, and available in more than 80 countries, making it particularly useful in resource-poor settings***(Shannon CS et al.,2004)***

Medical treatment using prostaglandin analogues alone or in combination with antiprogesterone have been shown to be effective in the management of spontaneous miscarriage (***Chung TK, et al.,1999).***

In first-trimester silent miscarriage, using a combination of mifepristone and repeated doses of misoprostol the success rate was reported to be 84%8. This approach was also cost saving compared to surgical management(***You JH, et al.,2005).***

On the other hand, compared to expectant management, it was associated with a higher and more predictable success rate. A meta-analysis showed that medical treatment was 2.8- fold more likely to induce a complete miscarriage than expectant treatment (***Sotiriadis A et al.,2005)***

Medical management by prostoglandins (PGs) orally or vaginally or various combinations of the two has the advantages of being non invasive, used without anaesthesia. can be available at all gestations and can be used as an outpatient method for termination of early pregnancy, with subsequently less cost (***Gillian F et al.,2007)***

Aim of the work

To compare between vaginal Misoprostol and surgical management in cases of first trimester missed abortion as regard of Morbidity and cost effectiveness.

ANATOMY & HISTOLOGY OF THE UTERUS & THE CERVIX

Gross Anatomy:

The uterus consist of two basic parts, the body and its endometrium and the uterine cervix(CX). The uterus is primarily muscular organ, is located in the pelvic cavity of non-pregnant women and also during first trimester of pregnancy. It is situated between the bladder on its anterior (ant) surface and the rectum on its posterior (post) surface. The hole of the non-pregnant uterus protrudes into the vagina and is approximately 2cm long, 0.5 - 1cm wide and cylindrical in shape. It is called the cervix (***Cunningham et al. 2005***).

The uterus (ut) measures about 7.5 cm in length, 5 cm. in breadth, at its upper part, and nearly 2.5 cm. in thickness; it weighs from 30 to 40 gm. It is divided into two portions. On the surface, about midway between the apex and base, is a slight constriction, known as the isthmus, and corresponding to this in the interior is a narrowing of the uterine cavity, the internal orifice of the uterus (internal os). The portion above the isthmus is termed the body and that below, the cervix. The part of the body which lies above aplane passing through the points of The cervix (cx) is the lower constricted segment of the uterus. It is somewhat conical in shape, with its truncated apex directed downward and backward, but is slightly wider in the middle than either above or below. Owing to its relationships, it is less freely movable than the body, so that the latter

may bend on it. The long axis of the cervix is therefore seldom in the same straight line as the long axis of the body.

The long axis of the uterus as a whole presents the form of a curved line with its concavity forward, or in extreme cases may present an angular bend at the region of the isthmus. The cervix projects through the anterior wall of the vagina, which divides it into an upper, supravaginal portion, and a lower, vaginal portion (***Bannister et al., 2005***).

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The supravaginal segment on its posterior surface is covered by peritoneum. Laterally, it is attached to the cardinal ligaments, and anteriorly, it is separated from the overlying bladder by loose connective tissue. The external os is located at the lower extremity of the vaginal portion of the cervix, the portio vaginalis (***Cunningham et al., 2005***).

The cervix is bounded at its cephalic end by the internal os and at its caudal end by the external os. The internal os is located at the peritoneal reflection of the bladder. The whole cervical length is about 2.5-3 cm and its wall is about 1 cm thick throughout its length. The cervix is divided into two portions, the portio vaginalis and the portio supra vaginalis, according to the segments that lie respectively below and above vaginal reflection. The vaginal reflection is located at about the junction of the lower and middle thirds of the cervix (***Cunningham et al., 2005***).

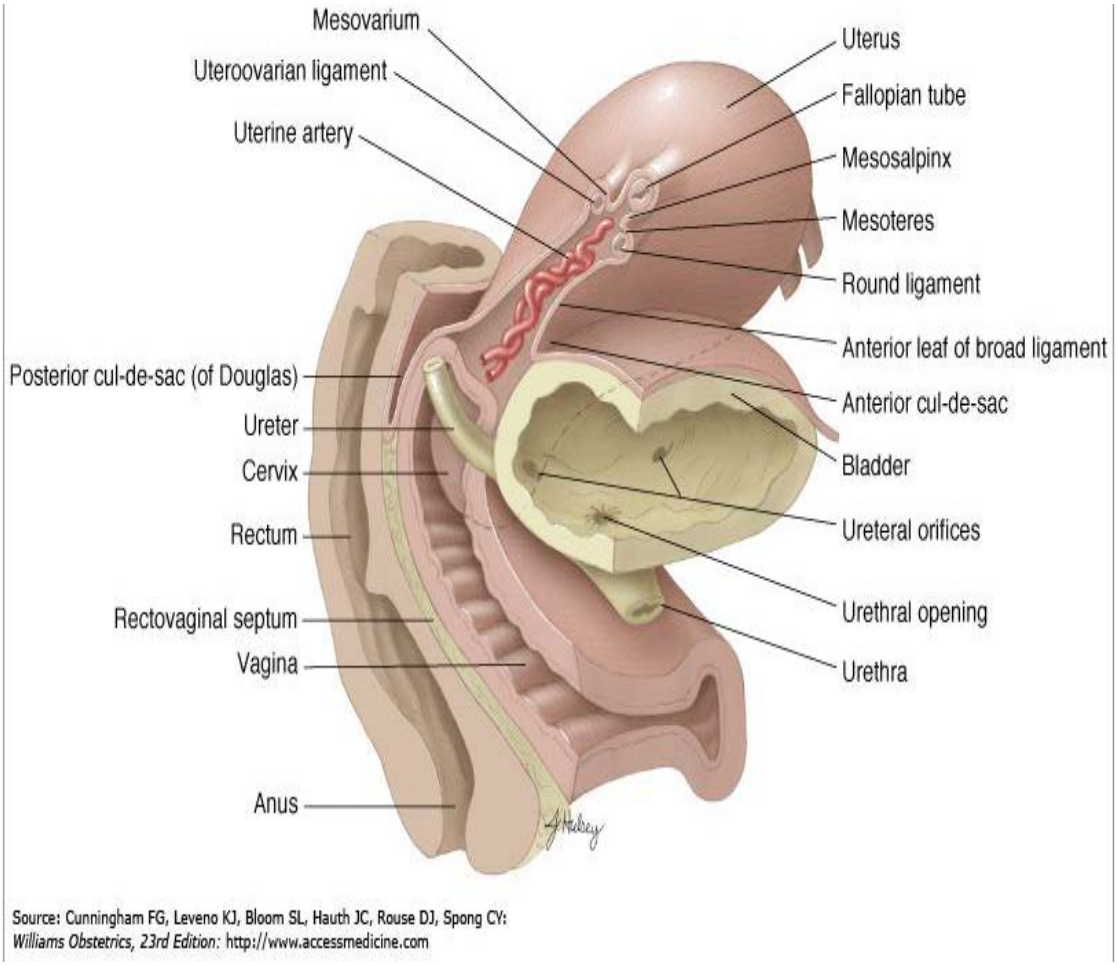

Figure (1) parts and relaeations of the uterus