

An Assessment of the Efficacy of Medical Management of Miscarriage: A Study in a Tertiary Care Hospital, Rajshahi, Bangladesh

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Abstract

Original Research Article

Miscarriage, also known as spontaneous abortion and pregnancy loss, is the natural death of an embryo or fetus before it is able to survive independently. We conducted a cross sectional descriptive study in the Department of Obstetrics and Gynaecology, Rajshahi Medical College Hospital, Rajshahi, Bangladesh during the period from September, 2016 to February, 2017. Our aim was to assess the efficacy of medical management of miscarriage in Bangladesh. We selected 87 participants aged between 14 to 34 years, came to visit in the selected hospital. Most of the participants were 26-30 years age group, representing 44.82 %. Mean age \pm SD were 30.75 ± 2.19 . Repeated dose misoprostol were in 3 participants, Median gravida were 2(2-8). 37 (42.52%) were nulyparous. Out of 87 mothers 51.72% presented with incomplete abortion, 31.03% with blighted ovum, 14.94% with missed miscarriage and rest 2.29% presented with congenital anomalies. The mean gestational age was 13.43 ± 1.19 week. Regarding final outcome, Successful medical management (no product of conception) 76 representing 87.35%. Successful medical management among repeated dose were 1(33.33%) and out of 5 acute presentation, 4(80%) were successful. No side effects were in 75 participants. In the conclusion, we can say that oral mifepristone plus misoprostol will prove to be a good alternative to surgical evacuation in Bangladesh.

Keywords: Evaluation, Medical Management, Miscarriage.

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INTRODUCTION

Abortion/miscarriage may be defined as the loss of product of conception in part or completely with or without a fetus weighing less than 500 gm before the age of viability which is usually 22 weeks [1]. (According to OGSB guideline). An incomplete miscarriage occurs when the disruption or partial passage of the products of conception has occurred. It is diagnosed clinically by the finding of an open cervical os and is confirmed by ultrasonography when the gestational sac is found to be disrupted or if there is thickened endometrium with disorganized, residual products of conception present [2]. Social and medical progress in the 21st century has eliminated many of dangers of child bearing. But maternal mortality is still one of the major concerns which are 1.70 per 1000 live birth in Bangladesh and at least one fourth of these maternal deaths occur due to complication of miscarriage performed in indigenous ways. Medical treatment commonly consists of administration of misoprostol to induce uterine contraction and expulsion

of product of conception. The administration of misoprostol is invariably oral, but different prostaglandins may be given in different ways-parental, oral or local (intravaginal). Studies have demonstrated that the vaginal administration of misoprostol may be superfluous, as progesterone levels are in range of the luteal phase (ie, lower than in viable pregnancies). Clinical trials showing that medical management is an acceptable alternative to surgical management [3]. The use of misoprostol for incomplete abortion should be limited to pregnancies of up to 12 weeks, even if a relatively high dose is used, according to a study conducted in Benin [4]. The hospitals are often overwhelmed by the large number of women presenting for the treatment of abortion and its complications⁵. In tertiary hospital settings, the number of abortion and its complications like haemorrhage and sepsis comprise more than half of all gynaecological admission [5] and out of this, incomplete miscarriage is alarmingly high. Limited access to safe treatment of abortion is a leading cause of maternal mortality and morbidity in the developing world [6]. In March, 2011

in an effort to reduce the country's high maternal mortality ratio, the government of Bangladesh implemented a policy to improve post abortion care for women who had spontaneous or induced abortions[7] sharp curettage was replaced by manual vacuum aspiration. In 2012, the use of misoprostol was adopted. Although some studies have shown the effectiveness of menstrual regulation by medication (MRM) no studies have examined the success rate of medication (Misoprostol with Mifepriston) to treat miscarriage. To fill this gap, and to provide a picture of medical management in a low-resource environment with a high demand for post abortion care, we plan to conduct a quasi-experimental study in RMCH.

The treatment of miscarriage almost always requires removal of retained products of conception from the uterus. D&C is the traditional method of removing tissue from the uterus. By this procedure uterine cavity is finally curetted by a metal curette. lowers the rate of complications most commonly associated with the uterine curettage also reduces the cost of providing quality post abortion care increases the potential for earlier access to services in primary health care facilities and reduce the need for referrals to higher levels within the health care system. In summary, medical management can be a method of choice for the treatment of miscarriage.

Objectives

a) General objective

- To assess the efficacy of the medical management of miscarriage

b) Specific Objectives

- To assess the effectiveness of the drugs (Mifepriston with Misopristol) in management of miscarriage.
- To find out the outcome of these patients.
- To assess the cost effectiveness, Duration of the procedure, Hospital stay, Utilization of hospital resources, Need of analgesia and anesthesia.

METHODOLOGY AND MATERIALS

We conducted a cross sectional descriptive study in the Department of Obstetrics and Gynaecology, Rajshahi Medical College Hospital, Rajshahi, Bangladesh during the period from September, 2016 to February, 2017. After getting approval from the authority, we selected our study participants by adopting a purposive sampling technique and maintaining inclusion criteria. Consecutive 87(eighty seven) patients with miscarriage who were admitted in the hospital, were our study participants. Ethical clearance was taken from ethical review committee of Rajshahi Medical College Hospital.

Inclusion Criteria

Pregnancy with per vaginal bleeding before the age viability, Uterine size within 20 weeks, Incomplete/Inevitable miscarriage, Blighted ova, missed abortion irrespective of parity are also included.

Exclusion Criteria

Severe per vaginal bleeding, Molar pregnancy, Per vaginal bleeding due to induced abortion with sepsis, Per vaginal bleeding due to trauma, per vaginal bleeding due to bleeding disorder, Any associated medical diseases.

RESULTS

In our study, we selected 87 participants aged between 14 to 34 years, came to visit in the selected hospital. Most of the participants were 26-30 years age group, representing 44.82 %. Mean age \pm SD were 30.75 \pm 2.19. Repeated dose misoprostol were in 3 participants, Median gravida were 2(2-8), Null parity were 37 (42.52%) and Nilli parity (required 2nd dose-misoprostol) were in 1 participants. Retain product of conceptions were 11 among the participants. Most of them were 6-10 weeks gestational age group. Incomplete miscarriages were in 45 participants and congenital anomalies were in only 2 participants. No side effects were in 75 participants. Regarding final outcome, Successful medical management (no product of conception) 76 representing 87.35%. Successful medical management among repeated dose were 1(33.33%) and out of 5 acute presentation, 4(80%) were successful.

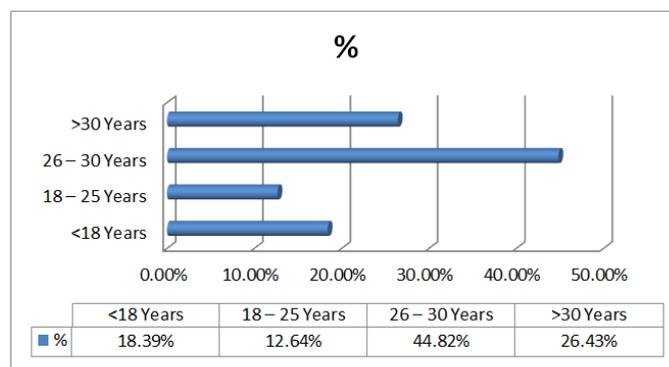


Fig-1: Age distribution of the study participants (n=87)

Table-1: Background characteristics of the study participants (n=87)

Variables	Frequencies (%)
Maternal age group (in years)	
<18	16 (18.39%)
18 – 25	11 (12.64%)
26 – 30	39 (44.82%)
>30	23 (26.43%)
Mean age \pm SD (in years)	30.75 \pm 2.19
Age range (in years)	14 – 34
Mean age \pm SD required repeated dose misoprostol (n=3) (in years)	31.82 \pm 1.16
Age range (in years)	26 – 34
Median gravida	2 (1-8)
nulliparity	37 (42.52%)
nulliparity (required 2nd dose-misoprostol) (n=3)	1 (33.33%)

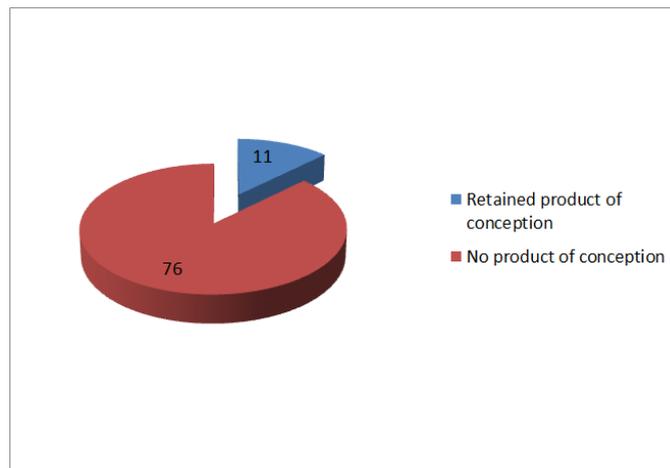


Fig-2: Retain product of conceptions among the participants (n=87)

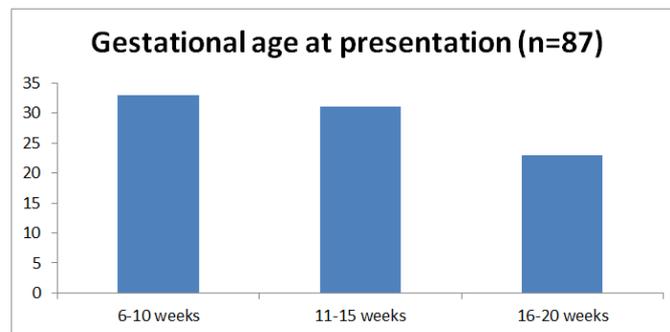


Fig-3: Distribution of gestational age at presentation (n=87)

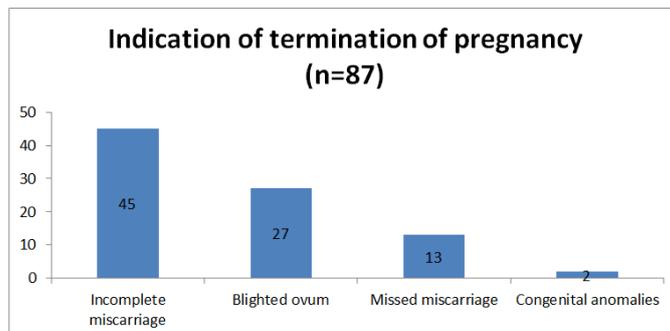


Fig-4: Distribution of patients according to indication of termination of pregnancy (n=87)

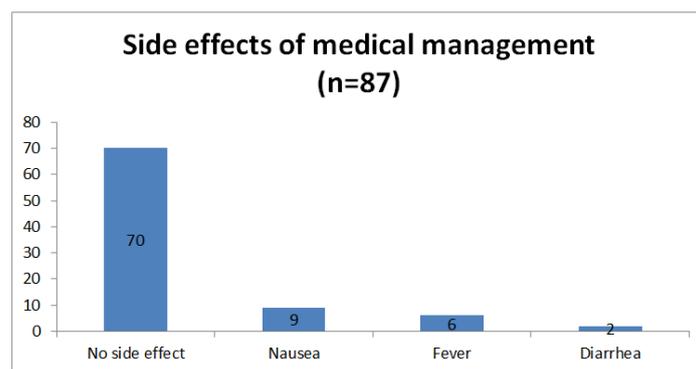


Fig-5: Distribution of patients according to side effect (n=87)

Table-2: Outcome of the study participants (n=87)

Ultrasonograph findings	Total (n=87)	Repeated dose (n=3)	Acute presentation (n=5)
Successful medical management (no product of conception)	76 (87.35%)	1 (33.33%)	4 (80%)

DISCUSSION

Miscarriage is generally defined as the spontaneous loss of a pregnancy prior to 24 weeks' gestation, that is, before the fetus is usually viable outside the uterus [8]. The clinical signs of miscarriage are vaginal bleeding usually with abdominal pain and cramping. If the pregnancy has been expelled, the miscarriage is termed 'complete' or 'incomplete' depending on whether or not tissues are retained in the uterus. If a woman bleeds but her cervix is closed, this is described as a 'threatened miscarriage' as it is often possible for the pregnancy to continue and not to miscarry [9]; if the pregnancy is in the uterus but the cervix is open, this is described as an 'inevitable miscarriage', i.e. it will not usually be possible to save the pregnancy and fetus. The now widespread use of ultrasound in early pregnancy, either for specific reasons (e.g. bleeding) or as a routine procedure, reveals pregnancies which are destined to miscarry inevitably, because they are 'non-viable[10]'. Non-viable pregnancies are either a 'missed miscarriage' if an embryo or fetus is present but is dead, or an 'anembryonic pregnancy' if no embryo has developed within the gestation sac. Regardless of the type of miscarriage, the overall incidence is considered to be between 10% and 15%, although the real incidence may be greater [8]. Most miscarriages occur within the first 12 weeks of pregnancy and are called 'early miscarriage', with those occurring after 13 weeks being known as 'late miscarriage'. The cause of miscarriage is generally unknown, but most are likely to be due to chromosomal abnormalities. The risk of miscarriage has been reported to be higher in older women, and where there are structural abnormalities of the genital tract, infection and maternal complications such as diabetes, renal disease and thyroid dysfunction. Also, some environmental factors have been linked with miscarriage including alcohol and smoking [8]. Miscarriage can sometimes lead to haemorrhage and

infection, and it can be an important cause of morbidity, and even mortality, particularly in low-income countries [11]. Women experiencing miscarriage may be overwhelmed by the symptoms and also quite distressed. Psychological problems can follow a miscarriage, and these can include loss of self-esteem resulting from the woman's feeling of inability to rely on her body to give birth. Emotional responses described include those of emptiness, guilt and failure. There can also be depression, anxiety, grief and anger [12]. A number of other consequences, including sleep disturbance, social withdrawal, anger and marital disturbance, may occur following miscarriage [13]. Fathers can also be affected emotionally [12].

A review of studies of misoprostol for incomplete abortion/ miscarriage shows varying efficacy rates with dosages ranging from 400 µg to 1200 µg[14,15]. Chung *et al.* [16] studied 400 µg misoprostol orally every four hours to a maximum dose of 1200 µg and assessed efficacy on the same day of treatment. Overall success rates were low, with 50% of misoprostol users requiring additional surgical care. Another study compared oral and vaginal misoprostol with repeated 800 µg doses and outcome assessment on the same day of treatment [17]. These 800 µg regimens showed slightly higher success rates (~60%) [17]. Studies in which efficacy was assessed later (3 to 15 days following initial treatment) have shown considerably higher success rates, ranging from 60%–95% [18, 19]. For instance, Gronlund *et al.* [20] compared 400 µg vaginal misoprostol to expectant management and achieved a 90% success rate in the misoprostol arm with assessment on days 8 and [14]. Two studies comparing a single dose of oral misoprostol 600 µg versus 600 µg × 2 doses (with a 4 hour interval) showed no difference in efficacy between the two regimens [14]. Weeks *et al.* [15] compared 600 µg oral misoprostol to manual vacuum aspiration (MVA). In this study, the success rate with misoprostol

was 96.3%, slightly better than MVA (91.5%) [20]. Three recent trials also documented efficacy rates above 90% for misoprostol when compared to MVA for treatment of incomplete abortion [21]. There has been concern that non-surgical management could lead to higher rates of infection. However, in a recent UK trial comparing medical vs. surgical vs. expectant treatment for incomplete abortion, the lowest rate of infection was in the expectant management arm [19]. If used for treatment of incomplete abortion, misoprostol promises to have an important public health impact. Women and health care systems worldwide could significantly benefit from this non-invasive treatment option. In low-resource countries, where infection, hemorrhage and uterine damage are far too commonly reported as consequences of (poor) surgical care, misoprostol treatment of incomplete abortion would be a tremendous step towards reducing morbidity and mortality due to abortion complications worldwide. Incomplete abortion is a common complication of early pregnancy. It can occur up to 15 percent of all clinically recognized pregnancies [26].

Currently dilatation and curettage (D&C) is the most popular management system in this regard. The rationale that all spontaneous abortions should be treated with D&C to prevent infection and haemorrhage has been questioned [27]. Treatment of incomplete abortion with misoprostol has also been reported with varying degree of success [28]. With the rising use of early ultrasound, an increasing number of miscarriages present as missed abortions before the onset of cramping and bleeding. A small case series reported that seven of eight women with missed abortion had a complete abortion after treatment with vaginal misoprostol compared with three of 12 treated by oral route [29]. In our study, after excluding the 16 patients who had received doses of Mifepriston with Misoprostol, the success rate of termination of pregnancy was 87.35%. This rate was higher than that in another study using repeated doses of misoprostol, which achieved a success rate of 83%. Another local study compared surgical evacuation and misoprostol in first-trimester termination of pregnancy [30]. In a study conducted by Zalanyi using vaginal misoprostol for missed abortion, on women having gravidity 2.4 ± 1.42 and parity 1.0 ± 0.84 . The study included only cases of amenorrhoea of up to 13 weeks, whereas, our study included mid-trimester cases [31]. In our study, we have studied mainly on the women of whom median gravida was 2 (1-8). We did not go for determination of mean of gravida and parity. The efficacy of vaginal misoprostol was studied for medical management of missed abortion by Wood [32], where gestational age of the patients ranged from 7-17 weeks (median 12 weeks) and 56 percent of the patients were nulliparous [32]. We have shown the success rate of oral misoprostol which showed almost similar categories of obstetric profile. In our study, the mean gestational age was 11.43 ± 1.19 week. But the median was 12 weeks. So, our study was

also similar to the previous study. In our study, among 87 patients 3 (3.44%) mothers required repeated doses of medication. In the subsequent dose we have used only misoprostol. Out of these 3 mothers, 33.33% showed success in medical management whereas rest 66.66% failed. Total failure rate of medical management in our study was 12.64%. The use of a single dose of misoprostol, repeated as clinically indicated, safely reduces but does not obviate the need for surgery. So, our study results are not going with the previous study as the failure rate is higher in repeated dose. However, as only 3 patients required repeated dose; it is very difficult to give a final comment from our study results. Mean (\pm SD) time required for expulsion of product of conception was 10.44 ± 4.43 hours in 45 (51.72%) women who were given Tab misoprostol plus mifepristone. In others, the time was much higher. The side effects experienced by the patients were negligible; only two patients (2.29%) had gastrointestinal cramps and diarrhoea, 6 (6.89%) patients experienced febrile reaction and 9 (10.34%) patients complained of nausea. In a study by Refacy *et al.* it was found that vaginal misoprostol administration was more effective than the oral route. The local effect of misoprostol on the cervix was considered to be one of the reasons [34]. But in our study, we have found oral misoprostol and mifepristone combination is very much effective though we didn't compare with vaginal route. There were five cases of unplanned emergency admissions in our study, all due to 'subjective' heavy bleeding and passage of products of gestation. Although clinical assessment did not reveal significant bleeding, three of them had emergency surgical evacuations (D&C) due to incomplete medical evacuations. The remaining two actually had complete abortions and were discharged from hospital. In our study, strategies for risk management were applied to reduce emergency admissions.

There were four cases complicated by infection, all of whom had incomplete miscarriages at the first follow-up. Infection was diagnosed in the first follow-up in two of them and at the second follow-up in the other two. None had major consequences after completing their antibiotic courses and surgical evacuation. Our experience highlights the importance of considering possible infection in those with missed/incomplete miscarriages after being offered medical evacuation, and patients should be duly advised to watch out for any symptoms of infection and seek medical advice accordingly. Prophylactic antibiotics for all women receiving medical evacuation may reduce the infection risk. The potential for allergic reactions and inducing antibiotic resistant bacteria could be reasons for resisting such a strategy. In our study, all the infections were in patients with failed medical evacuations. Undertaking vaginal swabs at the first follow-up for all asymptomatic patients with failed medical evacuations may be appropriate.

Limitations of the study

It was a cross-sectional study with small sample size, which doesn't reflect the scenario of the whole country.

CONCLUSION AND RECOMMENDATIONS

Obstetricians/gynaecologists have recently been challenged to rethink their approach to miscarriage. Furthermore, the high success rates (more than 90%) in the medical therapeutic abortion also suggest that non-surgical treatment should be considered. From this small study we can conclude here that medical management of miscarriage with oral mifepristone plus misoprostol will prove to be a good alternative to surgical evacuation. It will be cost effective, good compliance and more acceptable. Hospital based comparative study should be done to get a real scenario. A multicenter double blinded study in the divisional/ tertiary hospitals of whole Bangladesh can reveal the real picture regarding medical management of termination of pregnancy with justified reason. The study period should be long. Multi-disciplinary approach of research work can make a study precise & more authentic in this regard.

REFERENCES

- Sara H, Garmel MD. Current obstetric and Gynaecologic diagnosis and treatment. Haemorrhage in early pregnancy, eleventh edition. Lange medical books. 2003; 112.234.
- Sur SD, Raine-Fenning NJ. The management of miscarriage. *Best Pract Res Clin Obstet Gynaecol.* 2009;23(4):479-491.
- Neilson JP, Hickey M, Vazquez JC. Medical treatment for early fetal death (less than 24 weeks). *Cochrane Database of Systematic Reviews.* 2006(3).
- Adisso S, Hounkpatin BI, Komongui GD, Sambieni O, Perrin RX. Introduction of misoprostol for the treatment of incomplete abortion beyond 12 weeks of pregnancy in Benin. *International Journal of Gynecology & Obstetrics.* 2014 Jul 1;126(S1).
- Liskin LS. Complications of abortion in developing countries. *Population reports.* 1980 Jul(Series F). 1980.
- J Obstet Gynecol East central Africa.* 1993;11;12.9.
- World Health Organization (WHO). *Unsafe abortion; Global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008.* 6th edition. Geneva: World Health Organization. 2011.
- Shiers C. Abnormalities of early pregnancy. In: Fraser DM, Cooper MA editor(s). *Myles textbook for midwives.* 14th Edition. Edinburgh: Churchill Livingstone. 2003.
- RCOG. The management of early pregnancy loss. Royal College of Obstetricians and Gynaecologists, Guideline No. 25. London: RCOG. 2006.
- Sawyer E, Ofuasia E, Ofili-Yebovi D, Helmy S, Gonzalez J, Jurkovic D. The value of measuring endometrial thickness and volume on transvaginal ultrasound scan for the diagnosis of incomplete miscarriage. *Ultrasound in Obstetrics & Gynecology.* 2007;29(2):205-9.
- Bowyer L. The Confidential Enquiry into Maternal and Child Health (CEMACH). *Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer 2003-2005. The Seventh Report of the Confidential Enquiries into Maternal Deaths in the UK.* *Obstetric medicine.* 2008 Sep;1(1):54.
- Klier CM, Geller PA, Ritscher JB. Affective disorders in the aftermath of miscarriage: a comprehensive review. *Archives of Women's Mental Health.* 2002;5:129-49.
- Lok IH, Neugebauer R. Psychological morbidity following miscarriage. *Best Practice & Research Clinical Obstetrics & Gynaecology.* 2007;21(2):229-47.
- Blanchard K, Taneepanichskul S, Kiriwat O, Sirimai K, Svirirojana N, Mavimbela N, Winikoff B. Two regimens of misoprostol for treatment of incomplete abortion. *Obstetrics & Gynecology.* 2004 May 1;103(5):860-5.
- Weeks A, Alia G, Blum J, Winikoff B, Ekwaru P, Durocher J, Mirembe F. A randomized trial of misoprostol compared with manual vacuum aspiration for incomplete abortion. *Obstetrics & Gynecology.* 2005 Sep 1;106(3):540-7.
- Chung TK, Cheung LP, Leung TY, Haines CJ, Chang AM. Misoprostol in the management of spontaneous abortion. *BJOG.* 1995;102: 832-5.
- Chung TK, Lee DT, Cheung LP, Haines CJ, Chang AM. Spontaneous abortion: a randomized, controlled trial comparing surgical evacuation with conservative management using misoprostol. *Fertil Steril.* 1999;71:1054-9.
- Bique C, Ustá M, Debora B, Chong E, Westheimer E, Winikoff B. Comparison of misoprostol and manual vacuum aspiration for the treatment of incomplete abortion. *Int J Gynecol Obstet.* 2007;98(3):222-6.
- Trinder J, Brocklerhurst P, Porter R, Read M, Vyas S, Smith L. Management of miscarriage: expectant, medical, or surgical? Results of randomized controlled trial. *BMJ.* 2006; 332: 1235-40.
- Gronlund L, Gronlund AL, Clevin L, Anderson B, Palmgren N, Lidgaard O. Spontaneous abortion: expectant management, medical treatment or surgical evacuation. *Acta Obstet Gynecol Scand.* 2002;81:781-2.
- Dao B, Blum J, Thieba B, Raghavan S, Ouedraogo M, Lankoande J, Winikoff B. Is misoprostol a safe, effective and acceptable alternative to manual vacuum aspiration for postabortion care? Results from a randomised trial in Burkina Faso, West Africa. *BJOG: An International Journal of Obstetrics & Gynaecology.* 2007 Nov 1;114(11):1368-75.

22. Ngoc NTN, Blum J, Durocher J, Quan TTV, Winikoff B. Medical management of incomplete abortion using 600 versus 1200 mcg of misoprostol. *Contraception*. 2005; 72:438–42.
23. Diop A, Blumenthal P, Rakotovao JP, Winikoff B, Blum J. Misoprostol for treatment of incomplete abortion in Madagascar. *Contraception*. 2006;2(74):191-2.
24. Gómez Ponce de León R, Wing D, Fiala C. Misoprostol for intrauterine fetal death. *Int J Gynecol Obstet*. 2007;99(Suppl 2): S190–3.
25. Tang OS, Gemzell-Danielsson K, Ho PC. Misoprostol: pharma- cokinetics profiles, effects on the uterus and side-effects. *Int J Gynecol Obstet*. 2007;99(Suppl 2):S160–7.
26. Daya S. Habitual abortion. In: Copeland LJ, editor. *Textbook of gynaecology*. Philadelphia: WB Saunders Company. 2000: 227-71.
27. Auco H, Ballagh S, Herris HA, Demasio k. Is curettage needed for uncomplicated incomplete spontaneous abortion? *Am J Obstet Gynaecol*. 1998; 179:1279-82.
28. De Long EM, Makin JD, Manefeldt E, De Wet GH, Pattinson RC. Randomised trial of medical evacuation and surgical curettage for incomplete miscarriage. *Br Med. J* 1995; 311:662.
29. Crcinin M, Moyer R, Guido R. Misoprostol for medical evacuation of early pregnancy failure. *Obstet Gynaecol*. 1997; 89:768-72.
30. Ngai SW, Tang OS, Chan YM. Vaginal misoprostol for first trimester termination of pregnancy before nine weeks of gestation. *Hong Kong Med J*. 2006; 12(3):S44-6.
31. Sotiriadis A, Makrydimas G, Papatheodorou S, Ioannidis JP. Expectant, medical, or surgical management of first-trimester miscarriage: a meta-analysis. *Obstetrics & Gynecology*. 2005 May 1;105(5):1104-13.
32. Wood SL, Brain PH. Medical management of missed abortion: a randomized clinical trial. *Obstetrics & Gynecology*. 2002 Apr 1;99(4):563-6.
33. Zhang J, Gilles JM, Barnhart K, Creinin MD, Westhoff C, Frederick MM. A comparison of medical management with misoprostol and surgical management for early pregnancy failure. *New England Journal of Medicine*. 2005 Aug 25;353(8):761-9.
34. El-Refaey H, Rajasekar D, Abdalla M, Calder L, Templeton A. Induction of abortion with mifepristone (RU 486) and oral or vaginal misoprostol. *New England Journal of Medicine*. 1995 Apr 13;332(15):983-7.