A Study of Efficacy of Misoprostol in Early Pregnancy Loss

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Research Article

Abstract: This study aims to assess the efficacy of misoprostol in the management of missed miscarriage and anembryonic pregnancy. Data of 123 consecutive women with early pregnancy loss treated with medical method were collected prospectively in rural medical college hospital. Each woman received 600µg of misoprostol vaginally. Three hours following the first dose second dose was given if necessary. Women that failed to pass products of conception or had incomplete abortion on ultrasound scan were offered surgical evacuation. Success was defined as complete uterine evacuation within 12 hours on ultrasound scan, without need for surgical evacuation. **Results:** The overall success rate of medical management was 89.43%.the median dose of misoprostol required was 1200µg.and the median induction miscarriage interval after first dose of Misoprostal was 7.1±3.5 hours (range 6-10hrs) In 13 women medical method failed. Side effects were less common and mild.

Keywords: Early Pregnancy Loss, Anembryonic Pregnancy, Missed Abortion, Misoprostol.

Introduction

The term early pregnancy loss includes missed miscarriage (presence of non-viable embryo/fetus) and blighted ovum (anembryonic pregnancy i.e. gestational sac with absent embryonic echo)[1] Management of missed miscarriage has changed little over the years. Majority (88%)[2] women undergo surgical evacuation of uterus. There are well documented risks of surgical procedure used for evacuation which include cervical tear, uterine perforation, intrauterine adhesions and haemorrhage[3]. Also cost saving can be done by using medical methods of management. Various medical methods using prostaglandin analogue Misoprostal with or without antiprogesterone mifepristone have been used [4] To treat early pregnancy loss we used 600µg misoprostol (synthetic analogue of prostaglandin E_1) vaginally. We report our experience with this method.

Material and Methods

The study was carried out in rural Medical college in western Maharashtra. During the period from January 2010 to December 2012 Total130 women were admitted with the diagnosis of early pregnancy loss in first trimester (upto 12 weeks) The gestational age assessment was done by last menstrual period and ultrasound measurements. The diagnosis of missed carriage was confirmed on ultrasonography by absence of cardiac activity when crown-rump length (CRL)was =/> 7mm and of blighted ovum by absent fetal pole in a gestational sac =/>25 mm[5]. Women who gave consent for medical management tab. misoprostol 600µg.was inserted in posterior fornix virginally by a doctor and repeated 3 hourly intervals if necessary. Following misoprostol administration pulse, temperature and any systemic side effects were monitored.

Oral (tab. Paracitamol+diclofenac) or parenteral analgesic in the form of injection tramadol was administered if required. If products of conception were passed, women were observed for 4hours. Routinely USG examination was done to see completeness of miscarriage. Successful treatment was defined as no gestational sac seen or uterus shows heterogeneous shadow with maximum anteroposterior diameter of15mm or less.[6] Women who failed to pass products of conception over 12 hours were offered surgical evacuation. All women were advised follow-up at two weeks of treatment. Data were analyzed .In presenting the results; continuous variables are presented as means with standard deviations and ranges. Differences were regarded as statistically significant if $p<0.05$.

Results

Of 123 women with early pregnancy loss 78 (63.41 %) had miscarriage and 45 (36.58%) had an anembryonic pregnancy. Mean ±S.D. age of 123 women was 23±3.12 years (Range 19-32), 70 (56.91 %) were primigravida and 53 (43.08 %) were multigravida. The mean period of gestation was 9.3 weeks. (Range 6-12 weeks) Medical evacuation was successful in 110(89.43%) while 13 (10.57%) required surgical evacuation. Thus overall success rate was 110/123 (89.43%) The indications for surgical intervention are shown in Table 2. One woman had emergency curettage for excessive bleeding and in one woman it was done on her request. The median induction abortion interval was 7.18 hours. (Range6-12 Hours) 95 women (86.36 %) required no analgesia, 12

(10.9%) required oral analgesics and only 3 (2.72%) received injection Tramadol. 85% of women attended follow up after 15 days of discharge from hospital . None of them had any complications.

Discussion

Termination of early pregnancy with mifepristone and prostaglandin analogue Misoprostal is now established practice [7] In this study we have shown the clinical feasibility of managing missed abortion and anembyonic pregnancy medically without surgical intervention. Table 1 shows that overall success rate was 110/123 (89.43%) Table 4. shows results of other studies reported by various authors. Nielsen et al .[8] reported a success rate of 52% using a combination of 400 mg. of mifegest +400µg of Misoprostal both taken orally. Medical management may have been less successful in Neilsen et al. study because of smaller dose 400 µg of misoprostol administered orally rather than vaginal route Vaginal administration of misoprostol has been shown to be more effective in comparison with oral route[9,10] Plasma concentration and bioavailability of misoprostol tend to be greater and prolonged when administered vaginally[13].Our results are similar to other studies[9,10,11,12] In our study we have used ultrasound scan to confirm empty uterus. So none of women required readmission and evacuation of uterus following discharge from hospital for prolonged bleeding .P.T. Wagaarachchi et al.[14] did not use ultrasound scan to confirm empty uterus. However five women in their series required subsequent surgical evacuation following discharge from the hospital. The side effects of Misoprostal have been uncommon in our study. Only 4% of women experienced nausea, vomiting and diarrhea. This finding is similar to that reported by El-Rafeay et al.[15]

Conclusion

Medical treatment with 600µg. Misoprostol vaginally at 3 hourly intervals is an effective safe alternative to surgical management of early pregnancy loss. If this method becomes a standard practice a major part of emergency work in gynecology would be removed from operation theatre and will be convenient to patients and staff.

References

1. Farquharson RG,Jauniaux E,Exalto N ESHRE Special Interest Group for Early Pregnancy(SIGEP).Updated And revised nomenclature for description of early pregnancy events. Human Reprod 2005;20:3008-11.
2. Hemminki E (1998) Treatment of miscarriage: Current practice and rationale.Obste.Gynecol.,179,397-398.
3. Joint Study of the Royal college of General Practioners and the Royal college of Obstetricians and Gynecologists. Induced abortion operations and their early sequelae.J R Coll Gen Pract 1985;35:175-80.
4. R.C.O.G. Green-top Guideline No.25 October 2006 page No.8.
5. R.C.O.G. Green-top Guideline No.25 October 2006 Addendum Oct 2011.
6. Rulin MC, Bornstein SG, Campbell JD. The reliability of ultrsonography in the management of spontaneous abortion, clinically thought to be complete: a prospective study.Am J Obstet Gynecol 1993; 168:12-15.
7. Ashok.P.W, Penney. G CFlett G M et al.(1998)An effective regimen for early medical abortion: a report of 2000 consecutive cases.Hum.Reprod.13,2962-2965.
8. Nielsen S., Halin M., Platz-Christensen J.J. (1997) Unsuccessful treatment of messed abortion with combination of an antiprogesterone and a prostaglandin E_1analogue.Br. J. Obste.Gynaecol.104,1094-1096.
9. Crenin M.D., Moyer R.andGuido R. (1997) Misoprostol for medical evacuation of early pregnancy failure.Obstet. Gynecol.89, 768-772.
10. El-Refaey H, Hinshaw R.et al. (1992) Medical management of missed abortion and anembryonic pregnancy.Br.Med.J.; 305:1399.
11. Demetroulis C, Saridogan E., Kunde D., et al. (2001) a prospective randomized control trial comparing medical and surgical treatment for early pregnancy failure.Hum. Reprod.16.365-369.
12. Lister MS,Shaffer LE,Bell JC,Lutter KQ,Moorma KH(2005)Randomized,double-blind,placebo-controlled trial of vaginal misoprostol for management of early pregnancy failures.Am.J.Obstet.Gynecol;193(4):1138-43.
13. Zwierzchowska a Gluszak M.et al. (2012) Ginekol Pol; 83(10):760-5.
14. P.T.Wagaarachchi, P.W.Ashok, N. Narvekar, N.C.Smith and A.Templeton (2001) Hum.Reprod.; 16(9):1849-1853.
15. El-Refaey H,Rajshekar D.,Abdulla M.et al.(1995) Induction of abortion with mifepristone and oral or vaginal misoprostol.N.Engl.J.Med.;332:983-987.

Table 1: Patient Characteristics and Results

	Missed miscarriage n=78	Anembryonic pregnancy n=45	P value
Age (Mean±S.D.)	22.38±3.1	22±4.61	NS
Multiparity	53(67.95%)	31(68.89%)	NS
Medical evacuation	70/78(89.74%)	40/45(88.88%)	NS
Surgical evacuation	8/78(10.25%)	5/45(11.11%)	NS
No analgesia	60(85.71%)	35(87.5)	NS
Oral analgesia	8(11.42%)	4(10%)	NS
Parenteral analgesia	2(2.85%)	1(2.5%)	NS

NS=not significant

Table 2: Indications for surgical intervention

Emergency curettage to control bleeding	1(7.69%)
Incomplete miscarriage	6(46.15%)
No products passed	5(38.46%)
Patients choice	1(7.69%)
Total	13

Table 3: Induction abortion interval

<6hours	60(54.55%)
6-12Hours	50(45.45%)

Table 4: Comparison of results

Authors	Regimen/dosage	Route	Success
Nielsen et al[8].1997	Mifepristone400mg Misoprostol400µg	Oral	52%
Crenin et al.[9]1997	Misoprostol 800µg	Vaginal	88%
Demetroulis et al.[11] 2001	Misoprostol 400µg	Vaginal	82.5%
Lister MS et al.[12] 2005	Misoprostol 800µg	Vaginal	83%
Zwierzchowska A et al.[13]2012	Misoprostol 800µg	Vaginal	88%
Present Study	Misoprostol 600µg 3hourly	Vaginal	89.43%