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OUTCOME MEASURE AFTER USE OF MISOPROSTOL FOR MEDICAL TERMINATION OF MISCARRIAGE

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Abstract:

Objective: *To determine the outcome measure after use of misoprostol for medical termination of miscarriage*

Material and Methods: *This prospective observational study carried out at Ibri Regional Hospital Oman from September 2015 to February 2016. All women who had missed or incomplete miscarriage and received tablet misoprostol course for medical termination as per hospital protocol were selected.All patients received 400 micro gm of tab misoprostol stat (1 tab orally and 1 tab per vaginally), and then subsequent 800 micro gm tab misoprostol received orally in 4 divided doses. All patient had sonographic surveillance before and after misoprostol course. After completion of misoprostol course, scan repeated at least 4-6 hours after the last dose.The cutoff value of ultra-sonographic endometrial thickness for complete miscarriage taken 12-14 mm homogenous in nature.Upon discharge from the hospital, every patient called after 2 weeks for follow up and endometrial thickness was measured by ultrasound.*

Results: *Mean age of the patients in this study was 32.4±5.9. Mean gestational age of the patients was 11.3±3.3. 64(47.8%) patients had history of previous miscarriage and 41(30.6%) patients had previous history of D &C. 17(12.7%) patients had co morbidities while mean hemoglobin level was 11.5±1.1. In this study, 80(59.7%) patients presented with bleeding. Only 3(2.2%) had deranged coagulation profile. 20(14.9%) patients had post misoprostol bleeding and 2(1.5%) had fever.82(61.2%) patients report confirmed product of conception, in 3(2.2%) report product of conception not found and in 49(36.6%). Mean ± SD of Pre misoprostol endometrial thickness was 17.5±4.4mm, while of Post misoprostol Endometrial thickness was 12.1±3.1mm and after 2 weeks was 7.62±1.7.Misoprostol showed significant good efficacy out of 134 patients significant success rate was found 60.4% (p=0.002).*

Conclusion: *In the conclusion of this study misoprostol showed significant good success rate in the termination of miscarriage with less complications and short time of interval.*

Key Words: *Misoprostol, medical termination, miscarriage*

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INTRODUCTION:

Miscarriage and the abortion are identical and represents the fetus expulsion before age of the viability or before 24thweeks of the gestational age [1]. Almost 15-20%clinically diagnosed pregnancies end up in the failure of early pregnancy. Embryonic death previously labeled as missed abortion pronounce the failure of a formerly distinguished embryo to develop or indicate cardiac activity, or the nonattendance of heart movement in embryo over 5mm [2,3].

Every year estimately 30-million induced miscarriages occurred, highlighting the need of the effective and the safe way of making it as global issue for patients and gynecologists [4,5]. Two management techniques for the mischarge termination present asmedication and the surgical method. As well as misoprostol was 1stutilized in 1993 in the obstetrics for the labor induction, since then it has been utilized for the several indications cervix ripening and PPH control [6,7]. In a series suggested that medical treatment of the missed miscarriage with either oral or vaginal misoprostol is much effective and extremely acceptable, due to short induction to miscarriage interval and high acceptability [8,8].

It'salso needed in the gastro-duodenal ulcerprevention and the management, becauseits effective in the anti-gastric secretion activity. Additionally misoprostol also found as a strong stimulator of the contractility of the uterus, while it had not marketed for theses indications [10,11]. Oral route misoprostol having a significant great peak plasma concentration and a short time to the maximum concentrations than either vaginal or the rectal misoprostol [12].Misoprostol drug is the affective and the safe in both routs as oral and vaginal but the latter has been found to be the best in several clinical trials. Through the oral route had disadvantage of the decreased bioavailability and also some additional gastrointestinal complication. After administrationvaginal route it increased the contractility of the uterus for four hours continuously. Great effectiveness on uterus through vaginal route is probably through direct access to the myometrium through cervical canal and by the transfer of the misoprostol to the arterioles of uterus from the perivaginal venous plexus [13]. Some people believe that oral route is better for termination of pregnancy while other believe that vaginal route is effective. Therefore this study was conducted to see the effectiveness of combined oral and vaginal route in termination of mischarge.

METHODS:

We conducted a prospective observational study in a secondary care hospital in Oman. The records of all patients admitted to Ibri Regional Hospital from September 2015 to February 2016 either diagnosed as missed or incomplete miscarriage were reviewed. Study related all information of patients was collected from computerized hospital medical records system. We included all women who had admission in Obstetrics and Gynaecology department during the study period due to missed or incomplete miscarriage and received tablet misoprostol course for medical termination as per hospital protocol.Exclusion criteria include those who admitted with miscarriage and directly D&C done in view of hemodynamic instability due to excessive haemorrhage or for the patient request, viable pregnancy, suspected ectopic pregnancy, gestational trophoblastic disease, allergy to prostaglandin.We measured the effectiveness of misoprostol in these cases .we also assessed the patients who underwent surgical evacuation after misoprostol course.For the study First-trimester miscarriage states pregnancy loss, not beyond 12 weeks gestation.The second-trimester miscarriage was defined as any viable pregnancy ended in miscarriage spontaneously after 12 weeks of gestation, and before the viability age of the fetus (till 24 weeks gestation).Complete miscarriage defined those who didn't require evacuation after misoprostol.The incomplete miscarriage was described as the history of an expulsion of the product of conception (POC) followed by sonographic evidence of retained POC.Missed miscarriage was described as the absence of fetal cardiac activity by USG, which was measured at least twice in 2 weeks apart.Demographic data of all patients includes age, time of gestation, parity, type of miscarriage, previous history of miscarriages. Baseline investigations include complete blood count, coagulation profile and blood group. All rhesus negative patients received stat anti-D immunoglobulin as per national health protocol.All patients received 400 micro gm of tab misoprostol stat (1 tab orally and 1 tab per vaginally), and then subsequent 800 micro gm tab misoprostol received orally in 4 divided doses. All patients had sonographic surveillance before and after misoprostol course. After completion of misoprostol course, scan repeated at least 4-6 hours after the last dose.The cutoff value of ultra-sonographic endometrial thickness for complete miscarriage taken 12-14 mm homogenous in nature.Upon discharge from the hospital, every patient called after 2 weeks for follow up and endometrial thickness was measured by USG.

Data analysis

All data were analyzed using SPSS version 20. All quantitative data with normal distribution was presented as mean ± SD, median and range. Qualitative data was expressed as frequency and percentage and Chi-square (cross tabulation) test was used for the analysis. P value <0.05 (2 sided) is considered as statistically significant.

Medical ethical approval was taken from Hospital authority and research committee.

RESULTS:

Mean age of the patients in this study was 32.4±5.9. Mean gestational age of the patients was 11.3±3.3. 64(47.8%) patients had history of previous miscarriage and 41(30.6%) patients had previous history of D &C. 17(12.7%) patients had co morbidities while mean hemoglobin level was 11.5±1.1. 128(95.5%) patients had positive blood group while 6(4.5%) patients had negative blood group. Mean hospital stay was 2±0.92.

In this study, 80(59.7%) patients presented with bleeding, 27(20.1%) with pain and 27(20.1%) patients were asymptomatic. 65(48.5%) patients had incomplete miscarriage. 69(51.1%) patients had missed miscarriage.

TABLE:1

Table: 1. Demographic characteristics of the patients n=134

Demography	n=134
Age (Year) mean ± SD	32.4±5.9
Gravida (median=min-max)	4(0-13)
Para (median=min-max)	2(0-13)
Gestational age (Weeks) mean ± SD	11.3±3.3
Previous miscarriage (%)	64(47.8)
Previous D&C(%)	41(30.6)
Medical comorbidity (%)	17(12.7)
Haemoglobin level (gm/dl) mean ± SD	11.5±1.1
Blood group (%)	
Rhesus +ve	128(95.5)
Rhesus -ve	06(4.5)
Hospital stay (days) mean ± SD	2±0.92

Table: 2. Clinical presentation of the patients n=134

Presentation & findings	Frequency	(%)
Presentation		
Bleeding	80	(59.7)
Pain	27	(20.1)
Asymptomatic	27	(20.1)
Incomplete miscarriage	65	(48.5)
Missed miscarriage	69	(51.5)
Coagulation		
Normal	131	(97.8)
Deranged	03	(2.2)
Blood transfusion	02	(1.5)
Post misoprostol bleeding	20	14.9)
Fever	02	(1.5)
Histopathology report		
POC found	82	(61.2)
POC not found	03	(2.2)
Sample not sent	49	(36.6)

Table 3: Endometrium thickness on ultrasound

Endometrial thickness on USG	mean ± SD	Confidence interval (95%)	P value
Pre misoprostol Endometrial thickness	17.5±4.4	16.77-18.30	0.001
Post misoprostol Endometrial thickness	12.1±3.1	11.59-12.68	
Endometrial thickness after 2 weeks	7.62±1.7	6.58-8.20	

TABLE: 2 Out of 134 patients, 131(97.8%) patients had normal coagulation profile while 3(2.2%) had deranged coagulation profile. 2(1.5%) had blood transfusions. 20(14.9%) patients had post misoprostol bleeding and 2(1.5%) had fever. **TABLE: 2**
Regarding histopathological report, 82(61.2%) patients report confirmed product of conception, in 3(2.2%) report product of conception not found and in 49(36.6%) specimen was not sent for histopathology. **TABLE:2**
Mean ± SD of Pre misoprostol endometrial thickness was 17.5±4.4mm, while of Post misoprostol Endometrial thickness was 12.1±3.1mmand after 2 weeks was 7.62±1.7. **TABLE:3**
Misoprostol showed significant good efficacy as; out of 134 patients success rate was 60.4% (p=0.002).**FIG:1**

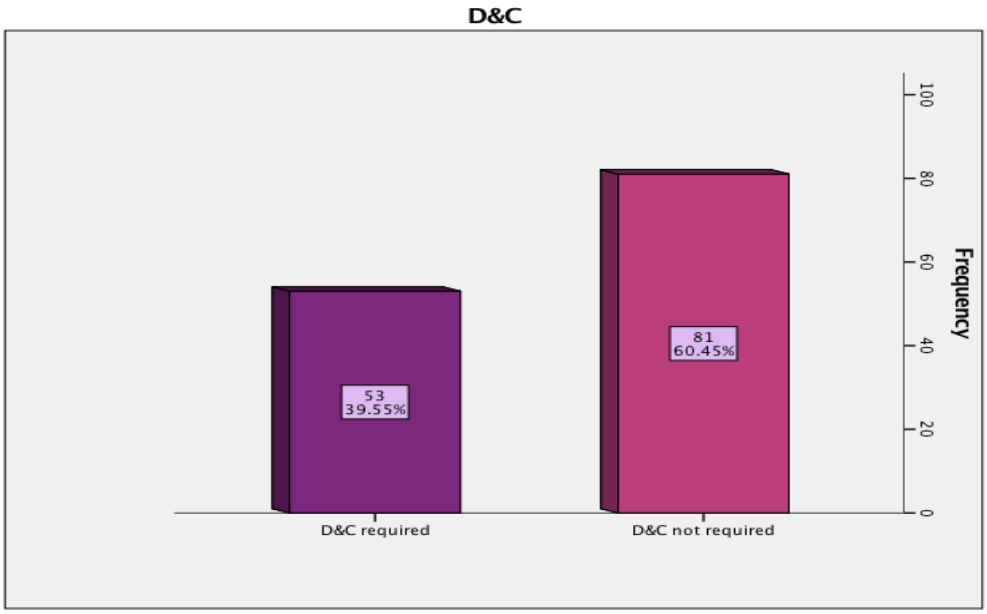

Fig:1. Patient's distribution according to D&C required/not after misoprostol n=134

P- value 0.002

DISCUSSION:

After diagnosis of the failure medical abortion usually leads to the surgical treatment. Medical termination of the pregnancy is the considered as successful method whenever complete abortion carried out withoutsurgery and it'sserious complications.Development of the standardized commercially prostaglandins haddeveloped the management, but cost of prostaglandins varies from the one preparation to another. Though identification of the effective and non-invasive pre-induction agent is of great clinical position in this era of the cost domination. Misoprostol administration in our series was found to be effectual. Though it is stable on room temperature and inexpensive than other costly conventional prostaglandins.As well as good success rate with only few side effects of misoprostol were observed in our cases.

Medical evacuations for the missed abortion are effective, cost effective the safe as compare to surgical evacuation of uterus and is the predominantly suited to the women not accept admission in the hospital and any surgical intervention under general anaesthesia.[14]In the favor of our study Graziosi GC et al [15] reported that medical management for the missed abortion may reduce the need of D&C, also less costly and is linked to high satisfaction level of patient [15].

In this study success rate misoprostol was 60.4% i.e. when these patients were given misoprostol, they completely aborted and evacuation was not required in these patients. These results are comparable to a study from Lahore by Khan FM et al [16] reported success rate of 53.1% with misoprostol 400 µg initially followed by 200 µg every 4 hours (4 doses) [16]. Results of another study conducted by shah Net al [17] also showed success rate of 50% which is comparable to our results. Another study conducted by Naz S et al [18] showed success rate of 68% with medical termination of pregnancy [18].

After termination of pregnancy, Product of conception were sent for histopathology in 63.4% patients .histopathology report confirmed product of conception in 61.2% patients while in 2.2% patients product of conception were not confirmed. While results of study conducted by Blumenfeld Zet al[19]showed that retained products of conception were histologically confirmed in 100%of the subjects [19].

In this study, mean ± SD of Pre misoprostol endometrial thickness was 17.5±4.4, while of Post misoprostol Endometrial thickness was 12.1±3.1 and after 2 weeks was 7.62±1.7. Similar results are seen in the study conducted by Blumenfeld Z et al [19] whose results showed that in 208 patients the endometrial thickness on the after termination of pregnancy on follow up visit was 12mm.Measurement of endometrial thickness after medical termination of pregnancy is beneficial in segregating patient to low or high risk for surgical treatment of retained product of conception.

It is essential for both, women those undergo medical abortion, and physician, to confirm that has been totally terminated. If products expulsion of the conception had confirmed by an experienced gynecologist in hours after supplementation of the drug, then further follow-up is probably not needed [20].

According to the side effects in this study 3(2.2%) had deranged coagulation profile. 2(1.5%) had blood transfusions. 20(14.9%) patients had post misoprostol bleeding and 2(1.5%) had fever. While Coughlin LB et al [21] reported that adverse effects included nausea (10.93%), diarrhea (2.34%), vomiting (7.8%) and hypotension (4.68%). On the other hand Chung et al [22],using oral misoprostol in the treatment of incomplete abortion, the side effects were nausea (68%), vomiting (34%), diarrhea (72%), abdominal colic (85%).

CONCLUSION:

In the conclusion of this study misoprostol showed significant good success rate in the termination of miscarriage with less complications and short hospital stay. Further large randomized clinical trial studies are required to compare the efficacy of misoprostol in the management of missed miscarriage termination.

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