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Efficacy of Misoprostol as a Post Abortion Care

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Aims: This study was done to find the efficacy of Misoprostol as a post-abortion care in our setting.

Methods: Women with incomplete abortion of gestational age ≤ 12 weeks or uterine size ≤ 12 weeks with open cervical os, haemoglobin ≥ 9 gm% and stable physical condition; were given 600 microgram Misoprostol orally and were observed for 24 hours for complete expulsion. If the patient failed to expel within 24 hours of Misoprostol administration manual vacuum aspiration or suction evacuation was done.

Results: One hundred and twenty-two women were enrolled in the study. Among them, 41% had complete expulsion within 24 hours of administration of misoprostol and 49% had incomplete expulsions. The success rate was high in the group of < 8 weeks of pregnancy. Among 50 (41%) successful cases, 38 (76%) belonged to 8 weeks of gestation by bimanual examination (p = 0.02).

Conclusions: Single dose of oral Misoprostol was effective, safe and alternative method to the management of incomplete abortion compared to the manual vacuum aspiration or suction evacuation in case of early pregnancy abortion.

Keywords: complete expulsion, incomplete abortion, manual vacuum aspiration, Misoprostol, post-abortion care.

INTRODUCTION

Approximately 67,000 women, mostly in developing countries die each year from untreated or inadequately treated abortion complications.[1] Incomplete abortion is a situation when a pregnant woman has an open cervix and has passed some, but not all of the products of conception. It can result from either spontaneous or induced pregnancy loss. Evacuation of the uterus with manual vacuum aspiration (MVA) or suction evacuation is usually performed procedure for the treatment of incomplete abortion, in which uterine size is less than 12 weeks. There is increasing evidence that Misoprostol, a prostaglandin-E1 analogue is a safe, effective, and acceptable method to achieve uterine evacuation for post abortion care (PAC). Misoprostol reduces the cost of post abortion care services because it does not require sterilized equipment, operating theatres, or skilled personnel and refrigeration, and may be administered by several different routes. With appropriate training and support, nurses and midwives can safely provide post abortion care services in outpatient settings. The WHO has included Misoprostol in the essential medicine list for the treatment of incomplete abortion.[2] Hence, the objective was to study the efficacy of Misoprostol in post abortion care in our setting.

METHODS

The study was carried out at Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu. The duration of study period was six months from 17 August 2008 to 11 February 2009. Inclusion criteria

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were gestational age ≤ 12 weeks determined by last menstrual period (LMP) or bimanual examination, with open cervical os, stable vitals and haemoglobin ≥ 9 gm%. Exclusion criteria were gestational age > 12 weeks, women with scarred uterus, multiple pregnancies, severe blood loss, infection and women with medical disease like asthma, heart disease, jaundice, glaucoma, and known sensitivity to prostaglandin.

Permission was taken from the research committee of the hospital. All women seeking emergency post-abortion care, whoever fulfilled inclusion criteria, were enrolled in the study. The women were informed about the study, benefits and side effects of Misoprostol as a treatment option of PAC. Verbal and written consents were taken. Detailed history like period of amenorrhea, lower abdominal pain, passages of clots or products of conception was taken. Once the diagnosis of incomplete abortion was confirmed, women who were fit for the study were admitted and single dose of Misoprostol 600 µg was given orally. The women were kept in close observation for 24 hours. Complete or incomplete expulsion of product of conception (POC) was confirmed by ultrasound examination after 24 hours. MVA or suction evacuation was performed for incomplete abortion even after 24 hours.

RESULTS

Total gynecological admissions during the study period were 1749. Among them 406 (23.21%) women were admitted with the diagnosis of incomplete abortion. Altogether 122 women satisfying the inclusion criteria were enrolled in the study. Almost half of the population (49%, n=60) covered the age group 20-24 years.

Among enrolled patients, there were no significant demographic differences in between the two gestational age groups.

Table 1. Frequency of incomplete abortion in relation to gestational age (n=122).

Gestational age	Number (%)
≤ 8 weeks	57 (46.72%)
> 8 –12 weeks	65 (53.27%)

Frequency of incomplete abortion in relation to gestational age was not significantly different in two groups.

Table 2. Comparison of success in relation to parity (n=122).

Parity	Successful		Unsuccessful		Total		P-value
	N	%	N	%	N	%	
0	32	43.24	42	56.76	74	60.65%	0.81
1 - 4	12	37.50	20	62.50	32	26.22%	
≥ 5	6	37.50	10	62.50	16	13.1%	
Total	50	40.98	72	59.02	122	100%	

In the present study efficacy of Misoprostol was not significantly different in relation to parity.

Table 3. Success of Misoprostol in relation to gestational age (n=122).

Gestational age (weeks)	Successful		Unsuccessful		Total	
	No	%	No	%	No	%
≤ 8	38	48.72	40	51.28	78	63.93%
> 8 -12	12	27.27	32	72.73	44	36.06%
Total	50	40.98	72	59.02	122	100%

DISCUSSION

Eliminating unsafe abortion and reducing complications which may arise from spontaneous or unsafe induced abortions, would definitely help in reduction in maternal morbidity and mortality. Misoprostol as PAC treatment would be an option in low resource settings, particularly in rural areas of the country where unsafe abortion remains one of the neglected health issues. The 2006 Nepal Demographic and Health Survey indicated reduction in the maternal mortality ratio (MMR), from 539 to 281 deaths per 100,000 live births.[3] And the government has announced dramatically reduction of MMR to 229 deaths per 100,000 live births in 2009 for the eight districts, but still unsafe abortion remains in the third cause of maternal death (14%) in Nepal. Hospital based studies have shown that among abortion complicated patient admitted in the government hospitals, 20% to 60% patients are due to unsafe abortion.[4] In the present study incomplete abortion rate over this period was 23.21%.

Misoprostol has become an important drug because of its uterotonic and cervical ripening actions. It is widely available, easy to administer, stable at room temperature, accessible, and inexpensive. There is increasing evidence that Misoprostol is a safe, effective, and acceptable method to achieve uterine evacuation for post abortion care.[5-12] American College of Obstetrics and Gynecology (ACOG) reviewing literature reported successful complete expulsion rate in Misoprostol group approximately

66-99% in women who receive it for incomplete, inevitable, and missed abortion in the first trimester.[2]

Weeks et al,[6] on randomization to compare Misoprostol with manual vacuum aspiration for incomplete abortion, found high rate of success in 600 µg oral Misoprostol (96.3% versus 91.5% in manual vacuum aspiration). Other studies [6-9,11] have reported slightly higher success rate with MVA use for the treatment of incomplete abortion, however statistically significant difference was not observed between the groups. Dao et al[7] have found success rate of 94.5% in oral 600 µg Misoprostol arm and 99.1% in MVA arm. Dabash et al,[9] reported complete uterine evacuation in 98.3% of women who received 400 µg sublingual Misoprostol and 99.7% who underwent MVA. Bano[8] reported 100% success rate with MVA use for the treatment of incomplete abortion, compare with 92% success in 600 µg single dose of sublingual Misoprostol group. Demetroulis[11] reported success of treatment with intra-vaginal 800 µg in 82.5% women with early pregnancy failure and none of them required a repeat evacuation.

The doses and routes of Misoprostol were different in these studies, which may vary the effectiveness of the drug. Most of the above authors evaluated efficacy of Misoprostol in one to two weeks period. In our study we have evaluated efficacy of Misoprostol in 24 hours only and as much as 50 of 122 women (41%), who received single oral dose of 600 µg Misoprostol had complete abortion within 24 hours. Among 122 women, more women had incomplete abortion, taking the criteria of 24 hours, i.e. 72 (59.02%) versus 50 (40.98%) {Table 3}. Range of efficacy and higher success rate was seen in women, when clinicians wait for 1-2 weeks after Misoprostol treatment before judging success or failure.

In the present study efficacy of Misoprostol was not found significantly different in relation to parity (p=0.81) {Table 2}. Majority of the women (60.6%, n=74) were para 0 and however, efficacy of single dose 600 µg Misoprostol was not found significantly different in relation to parity (Table 2).

In this study, the highest success rate (n=38, 49%) was found in the ≤ 8 weeks period of gestation (n=78) {Table 3}. Among 78 patients in this group, 38 (49%) were successful within 24 hours of misoprostol use. If the patient failed to expel within 24 hours of Misoprostol administration manual vacuum aspiration or suction evacuation was done.

The most common recorded side effects of Misoprostol are nausea, vomiting, diarrhea, abdominal pain, chills, shivering and fever, all of which are dose dependent. Prostaglandins such as PGE_2 and PGF_2-alpha can cause myocardial infarction and bronchospasm, but Misoprostol does not.[12] Side effects of Misoprostol are directly related with dose and interval between the doses, lowering the doses can lessen the side effects. Weeks et al[6] reported less frequent complications rate in those receiving Misoprostol than those having manual vacuum aspiration (0.9% versus 9.8%) In the 6 hours after treatment, women using Misoprostol reported heavier bleeding but lower levels of pain than those treated with manual vacuum aspiration. Dabash et al[9] reported, decrease in hemoglobin of 2g/dL or more was comparably rare in the 2 groups (0.3% Misoprostol vs 0.9% MVA). Mean change in hemoglobin was also clinically similar (-0.5 g/dL Misoprostol vs. -0.4 g/dL MVA; P<0.01). Heavy bleeding was rare (2.4% Misoprostol vs 1.6% MVA) following treatment. Serious side effects were not found with use of Misoprostol as a treatment of incomplete abortion in our study.

High levels of satisfaction reported among providers and patients in Misoprostol use.[5-8] Dao et al[7] reported 96.8% women in Misoprostol were satisfied with the method.[7] Dah et al[8] observed satisfaction rate of 95% with the Misoprostol treatment for incomplete abortion.

Many challenges exist in Nepal in respect to socio-economic problems, lack of access to quality abortion services, skilled/trained service providers and advocacy works, especially rural areas of the country. Nepal maternal mortality and morbidity study-2008/2009 reported the important gaps in the knowledge and skill of some providers as considerable percentage of providers continue to routinely use dilatation and curettage rather than the internationally recommended MVA method, and some non-government facilities do not even have MVA set.[4] Misoprostol would be a most appropriate offer for the treatment of incomplete abortion for women and providers as it is safe, effective, and non-invasive treatment option, particularly where supplies are limited and there is lack of skilled providers.

CONCLUSIONS

Single dose of oral 600 µg Misoprostol is effective, safe and alternative method in the management of incomplete abortion compared to manual vacuum aspiration or suction evacuation in case of early pregnancy complication.

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