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ORIGINAL ARTICLE

Indication and Complication of Induction of Labour by Misoprostol among Pregnant Women in a Clinical Trial in Dhaka City

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Abstract

Background: Misoprostol is very useful for induction of labour among the pregnant women. **Objective:** The purpose of the present study was to see the indication and complication of induction of labour by misoprostol among pregnancy women. **Methodology:** This single center clinical trial was carried out in the Department of Obstetrics and Gynaecology at a private hospital in Dhaka city, Bangladesh from September 2005 to February 2006 for a period of six months. Primi or second gravida patients with the gestational age between 37 weeks to 42 weeks in singleton pregnancy with cephalic presentation and not in labour were selected as study population. After proper selection of the cases, induction of labour was done by applying tablet misoprostol 50mcg in the posterior vaginal fornix. Complication of induction were recorded. **Result:** A total number of 60 patients were recruited for this study. 24 patients were between 23 to 26 years and 12 patients were between 27 to 30 years. Pre-eclampsia, pregnancy induced hypertension and intrauterine growth retardation were the most common indication of induction. In this study 31(51.7%) patients needed only 1 dose of Misoprostol and 24 (40.0%) patients needed 2 doses and only 5(8.3%) patients needed 3 doses of Misoprostal. In this study 11.67% patients experienced Nausea & vomiting and 3.33% patients developed hyperstimulation. **Conclusion:** In the conclusion, the use of misoprostol results in a shorter induction to delivery time and miserable adverse effects on the method of delivery. [*Journal of Current and Advance Medical Research, July 2020;7(2):80-83*]

Keywords: Indication; complication; induction of labour; misoprostol; pregnant women

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Introduction

Induction of labour is an integral part of modern obstetric practice and should be simple, safe, effective and preferably noninvasive[1]. There are different methods of induction of labour like medical, surgical and combined. There is no ideal accepted method of induction of labour. History says, from ancient time many methods were used for induction of labour. Now-a-days, oxytocin and prostaglandins are randomly used for induction of labour[2]. Oxytocin is the drug of choice for labour induction when the cervix is favourable. At present oxytocin is the prime labour induction drug available in our country[3].

The main indications for labour induction during the past 40 years can be subdivided into maternal, fetal, or social, or a combination of these, and they may either be evident or anticipated[4]. It should be done either for maternal or foetal interests or more commonly for a combination of both. When induction of labour is undertaken consideration must be given to two opposing sets of variables: the risk of maternal and/or foetal morbidity or death if pregnancy continues, against the risk of prematurity coupled with the possible complications of the induction, if the pregnancy is terminated. Two indications stand out in frequency beyond all others, namely prolonged pregnancy**,** pre-eclamptic toxaemia and hypertension[5]. Other indications include diabetic pregnancy**,** Rh iso-immunization**,** Intrauterine growth retardation/placental insufficiency**,** intrauterine death of the foetus**,** antepartum haemorrhage certain cases**,** congenital abnormalities, hydramnios producing marked pressure symptoms, premature rupture of the membranes. It should be emphasized that these conditions do not automatically warrant induction- the severity of the condition, the condition of the foetus and favourability of the cervix etc. must be carefully assessed[6].

The use of misoprostol results in a shorter induction to delivery time, a reduction in rate of caesarean section and without any adverse effect on the mother and the neonatal outcomes[7]. It is rapidly absorbed and is more effective than oxytocin or dinoproston for induction of labour. Misoprostol is a cheap and stable PGE_1 analogue that is active both by the vaginal and oral route of administration for cervical ripening and induction[8]. When it is given orally, it is rapidly absorbed by the gastrointestinal tract and undergoes de-esterification to its free acid, which is responsible for its clinical activity. The peak concentration and half-life of Misoprostol acid, the active metabolite, are 12 and 21 minutes, respectively[6]. The purpose of the present study was to see the indication and complication of induction of labour by misoprostol among pregnancy women.

Methodology

This single center clinical trial was carried out in the Department of Obstetrics and Gynaecology at a private hospital in Dhaka city, Bangladesh from September 2005 to February 2006 for a period of six months. Primi or second gravida patients with the gestational age between 37 weeks to 42 weeks in singleton pregnancy with cephalic presentation and not in labour who came for delivery purposes during the study period were selected as study population. The methods of induction of labour by vaginal Misoprostol were explained to the patients. Written consent was taken from each patient. All relevant clinical information of the cases was recorded systematically in a predesigned clinical data sheet. At first, proper history of the patient was taken which was included period of amenorrhoea, history of antenatal checkup, immunization, gravida and last menstrual period. Then general examination of the patient was done to detect any disease which complicates pregnancy or labour. This was followed by per abdominal examination to see foetal presentation, lie, foetal heart sound. Per vaginal examination was done to do the clinical pelvimetry and Bishop's scoring. If the pelvis was adequate for normal vaginal delivery, then irrespective of any Bishop's score cases were selected for induction of labour. After proper selection of the cases, induction of labour (IOL) was done by applying tablet misoprostol (50mcg) in the posterior vaginal fornix. Close observation of the patient was done to see when the labour started. If the labour did not start, then the same dose was repeated up to the establishment of true labour pain. When the labour started close monitoring of the patient and the foetus were done. When the labour went into the active phase then further application of tablet misoprostol was stopped and the partograph was maintained. Following the partograph the progress of labour was monitored. If the labour was seen to be prolonged, then augmentation was done by giving oxytocin drip. Close observation of the progress of labour was done to see whether there was any untoward effect on foetus and neonate. Purpose of induction of labour was successful when vaginal delivery occurred without any untoward side effects and without any surgical interference. After collecting all the data, analysis has been done by using SPSS version 22.0. The findings of qualitative data were expressed as frequency and percent.

Result

A total number of 60 patients were recruited for this study after fulfilling the inclusion and exclusion criteria. In this study all the patients were in early age group. 24 patients were between 23 to 26 years and 12 patients were between 27 to 30 years. Therefore, 60% patients were within 23 to 30 years of age (Table 1).

Table 1: Age Distribution of Study Population (n=60)

Age Group	Frequency	Percent
18 to 22 Years	23	38.0
23 to 26 Years	24	40.0
27 to 30 years	12	20.0
More than 31 Years	1	2.0
Total	**60**	**100.0**

The pie diagram (Figure I) shows that postdated pregnancy constitutes the major cause of indication. Next in order of frequency are pre eclampsia, Pregnancy induced hypertension, oligo-hydramnions, Rh negative and then intrauterine growth retardation.

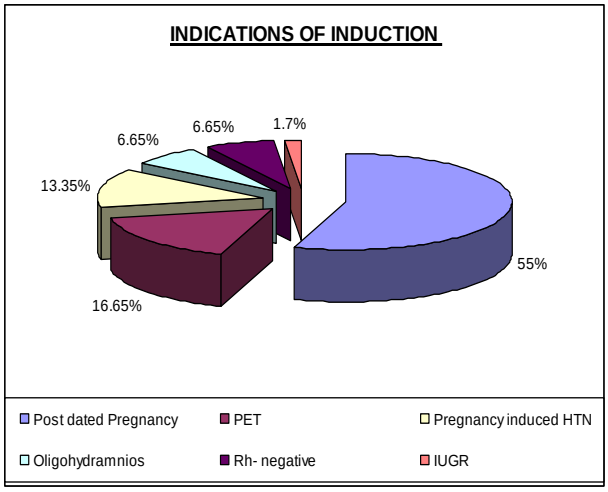

Figure I: Indications of Induction

Table 2: Total Doses of Misoprostol Given

Total doses	Frequency	Percent
1	31	51.7
2	24	40.0
3	5	8.3

In this study 31(51.7%) patients needed only 1 dose of Misoprostol and 24(40.0%) patients needed 2 doses and only 5 (8.3%) patients needed 3 doses of misoprostal (Table 3).

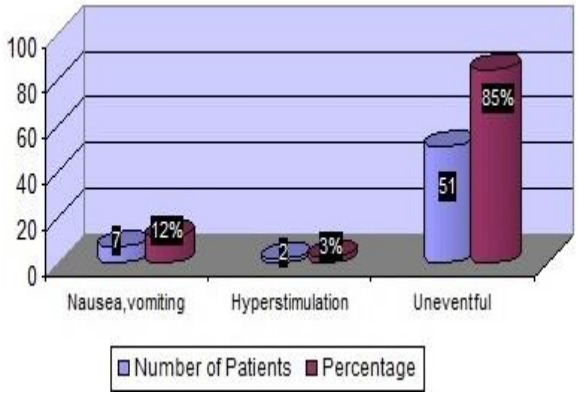

Figure II: Complication of Induction of Labour by Misoprostol

This figure II shows complications of labour induction. In this study 11.67% patients experienced Nausea & vomiting and 3.33% patients developed hyperstimulation.

Discussion

This study was designed to see the role of vaginal Misoprostol in induction of labour in term pregnancy and to evaluate its outcome. Several similar types of studies were undertaken in Bangladesh by different researchers to find out a suitable method of induction of labour. Amiruzzaman[8] was carried out a study among 65 patients and the mean age of patients was 24.65 years which is almost similar. In his study, in the analysis of indication of induction of labour prolonged pregnancy was on the top which is same in this study. In another similar study Jahan[9] showed that 63% patient with unfavourable cervix required caesarean section after induction of labour and in that study no prostaglandins was used for cervical ripening. However, in this study, because of prostaglandins the percentage of caesarean section was only 43% and vaginal delivery was 57% cases. Sultana[10] undertook one study in Dhaka Medical College Hospital to compare oral versus vaginal Misoprostol in IOL. In her study, she used oral Misoprostol in 50 cases and vaginal Misoprostol in 50 cases. She used 100µgm 4 hourly in each route, which is different in this study.

Toppozada et al[11] undertook one study in Alexandria, Egypt to compare vaginal versus oral Misoprostol for induction of labour. Induction of labour was carried out in 40 women near term in two equal and randomized groups (according to a computer generated table) using Misoprostol. Group I received vaginal Misoprostol (100 µgm) every 3 hours while group II patients were given the

same dose via the oral route. The dose was doubled if no response was detected under continuous cardiotocographic (CTG) tracings. They founded that the vaginal route of administration induced a higher success rate in a shorter time interval using a lower dose but was associated with more abnormal FHR patterns and instances of uterine hyperstimulation. Their recommendation was to use the vaginal approach with carditocographic monitoring.

Shetty et al[12] in a teaching hospital in UK conducted a study to compare the efficacy of equivalent doses of orally administered with vaginally administered Misoprostol in induction of labour at term. Participants were two hundred and forty five pregnant women at term with medical and obstetrical indications for labour induction and unfavourable cervix. The women were randomly assigned to receive 50 µgm of Misoprostol orally or vaginally four hourly to a maximum of five doses. Main outcome measures were interval from induction to vaginal delivery, mode of delivery, oxytocic and analgesic requirements in labour, neonatal outcome, patient satisfaction and acceptability. The study revealed that the mean induction to vaginal delivery interval was significantly shorter in the vaginal group compared with the oral group. Fewer women needed oxytocin augmentation in the vaginal group. There was no difference in the mode of delivery, analgesic requirements or neonatal outcome in the two groups. But there was a higher incidence of uterine hyperstimulation in the vaginal group and more caesarian sections were performed for fetal distress in this group although delivery rates were similar in the two groups. They concluded with the findings that Misoprostol effectively induced labour, with the vaginal route of administration having a faster action than the oral route in equivalent doses.

Misoprostol is a well-tolerated drug. Diarrhoea is the most common adverse effect reported, followed by nausea, abdominal pain and headache. Less frequently reported adverse effects include fatigue, rash, vomiting and body ache[13]. The main complaints in ulcer therapy especially in women are abdominal cramps and uterine bleeding. The drug, when given in the first trimester, is known to induce congenital anomalies in the foetus. Even, continued pregnancy after exposure to Misoprostol in the first trimester carries the potential risk of malformed foetus[14]. Incomplete abortion following Misoprostol administration is fraught with the risk of protracted and plentiful blood loss and sepsis.

Conclusion

In the conclusion, it can be said that the use of Misoprostol results in a shorter induction to delivery time, a reduction in the rate of caesarean delivery and also did not appear to produce miserable adverse effects on the method of delivery or the foetus. There is increasing evidence that Misoprostol, administered vaginally, is as effective as conventional methods of induction of labour.

References

1. Calder AA. Induction & Augmentation of Labour: Edited by D. Keith Edmonds; Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduates. 6th edition Oxford; Blackwell Science Ltd; 1999 page 252-257
2. Dutta DC. Induction of Labour: Text Book of Obstetrics including Perinatology and Contraception: 6th edition 2005: New Central Book Agency (P) Ltd. Page:520
3. Jefferson H. Harman. JR. Current Trends in Cervical Ripening and Labour Induction. Am J Obstet Gynaecol 1995:173:1079-84
4. Kwon JS, Davies GAL, Mackenzie VP. A Comparison of Oral and Vaginal Misoprostol for induction of labour at term: a randomized trial, Br J Obs Gynaecol 2001;108:23-26
5. Caldeyro-Barcia R. Randomized trial of two doses of the prostaglandin E1 analogue Misoprostol for labour induction: Am J Obstet Gynaecol 1997;177:364-71
6. Montvale NJ. Physicians' Desk Reference. 53rd ed. Medical Economics, 1999: 2951-3
7. Dale HH. On some physiological action of ergot. J Physiol 2006;34:163-205
8. Amiruzzaman M. Use of Oral Prostaglandin for Induction of labour: (Unpublished) 2004
9. Jahan S. Clinical study of the indications and outcome of induction of labour at I.P.G.M&R. (Unpublished) 1990.
10. Sultana N. Oral Versus Vaginal Misoprostol for Induction of labour: (Unpublished) 2004.
11. Toppozada MK, Anwar MY, Hassan HA, el- Gazaerly WS. Oral or vaginal Misoprostol for Induction of labour. Int J Gynaecol Obstet 1997;56:135-9
12. Shetty A, Danielian P, Templeton A. A Comparison of oral and vaginal Misoprostol tablets in induction of labour at term. Br J Obs Gynaecol 2001;108(1):23-6
13. Carlan SJ, Blust D, William O. Buccal versus intravaginal Misoprostol administration for cervical ripening. Am J Obstet Gynecol 2001:186(2):229-233
14. Majok F, Zwizwai M, Lindmark G, Nystrom L. Labour induction with vaginal Misoprostol and extra- amniotic prostaglandin F2 alpha gel. Int J Obstet Gynaecol 2002:76; 127-33