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ORIGINAL ARTICLE

Neonatal Outcome among the Misoprostol Induced Term Pregnant women

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Abstract

Background: Use of misoprostol in term pregnancy can give some adverse result. **Objective:** The purpose of the present study was to see the neonatal outcome among the term pregnant women. **Methodology:** This cohort study was carried out in the Department of Obstetrics and Gynaecology at Sir Salimullah Medical College and Mitford Hospital during the period from 1st September 2005 to 28th February 2006. 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 at any age were selected as study population. After proper selection of the cases, induction of labour (IOL) was done by applying Tab Misoprostol 50mcg in the posterior vaginal fornix. Purpose of induction of labour was successful when vaginal delivery occurred without any untoward side effects and without any surgical interference and with good APGAR score of the newborn. **Result:** A total number of 60 pregnant women were recruited in this study. 60% patients were within 23-30 years of age. This table shows that out of 43 cases of vaginal delivery 22 cases needed 1 dose of Misoprostol 21 cases needed more than 1 dose. This table shows that all the baby were live born. Among them 55 (92%) baby were healthy and 5 (8%) baby were asphyxiated. the depressed babies were well after resuscitation in usual manner and after 5" mean Apgar score was 9.46. Mean birth weight was 2.94 kg. **Conclusion:** There is no perinatal death in the misoprostol induced delivery; however, neonatal asphyxia is found in few cases as an adverse outcome. [J Curr Adv Med Res 2015;2(1):3-6]

Keywords: Neonatal outcome, Misoprostol, term pregnancy, neonatal asphyxia

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Introduction

Induction of labour is an integral part of modern obstetric practice and should be simple, safe, effective and preferably non invasive[1]. There are different methods of induction of labour like medical, surgical and combined. There is no ideal accepted method of induction of labour. Prostaglandins are hormones naturally present in the uterus that cause contractions during labour[2]. Currently, a prostaglandin (Misoprostol), a synthetic Prostaglandin E_1 analogue marketed as a gastrointestinal mucosal protection agent is a safe, easily available, efficacious and inexpensive for use in cervical ripening and labour induction. Latest studies show that, prostaglandin is superior to oxytocin as prostaglandin is local hormone which softens the cervix directly[3]. In fact, prostaglandin provides an excellent alternative to conventional oxytocin for induction of labour[4].

There has been a growing body of literature to suggest that Misoprostol is highly effective and safe as a labour inducing agent[5]. It is less expensive, can be stored at room temperature and has fewer side effects. 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. It is rapidly absorbed and is more effective than oxytocin or dinoproston for induction of labour[6]. Misoprostol is a cheap & stable PGE_1 analogue that is active both by the vaginal & oral route of administration for cervical ripening and induction. 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[7-8].

The success of induction depends to a large extent on the consistency; compliance and configuration of the uterine cervix[9]. In 10% of all pregnant women have an unfavorable cervix and require labour to be induced[10]. Although the safety and reliability of induction has greatly increased in current years, in more advanced countries because of development of newer and better induction techniques and modern facilities for foetal and maternal monitoring, it is still in position where it has to depend mainly on clinical judgment and this imposes several limitations. However, in absence of sophisticated monitoring techniques patients are induced everyday practice with best possible efforts and attention, cases are managed to have a better obstetric outcome. The purpose of the present study was to see the neonatal outcome among the term pregnant women.

Methodology

This cohort study was carried out in the Department of Obstetrics and Gynaecology at Sir Salimullah Medical College and Mitford Hospital during the period from 1st September 2005 to 28th February 2006. 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 at any age were selected as study population. The methods of induction of labour by vaginal Misoprostol were explained to the patients who volunteered and were selected for the study. Consent was taken from every 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 included period of amenorrhoea, H/O antenatal check up, immunization, gravida, last menstrual period etc. 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. Then 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 Tab 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 Tab 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 and with good APGAR score of the newborn. After collecting all the data, analysis has been done by using SPSS and the results are displayed in tables and diagrams.

Results

This figure above shows that all the patients were in early age group. 24 patients were between 23-26 years and 12 patients were between 27-30 years. So, 60% patients were within 23-30 years of age (Figure 1).

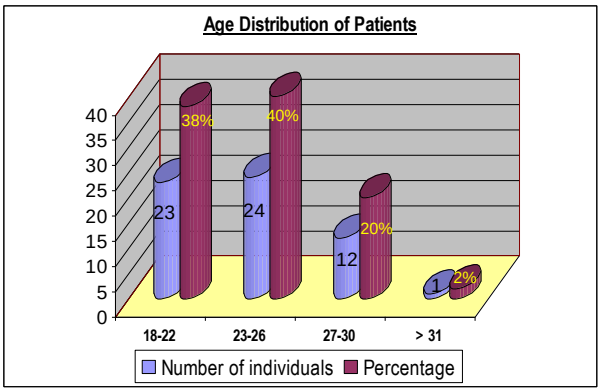

Figure 1: Age Distribution of Patients

Out of 43 cases of vaginal delivery 22 cases needed 1 dose of Misoprostol 21 cases needed more than 1 dose. The entire babies were live born. Among them 55 (92%) baby were healthy and 5 (8%) baby were asphyxiated. the depressed babies were well after resuscitation in usual manner and after 5" mean Apgar score was 9.46. Mean birth weight was 2.94 kg (Table 2b).

Table 1: Total Dose of Misoprostol Needed In 43 Cases of Vaginal Delivery

Dose Needed	Frequency	Percentage
1	22	51.20
> 1	21	48.80

Discussion

This study was designed to see the role of vaginal Misoprostol in induction of labour in term pregnancy and to evaluate its neonatal outcome. Several similar types of studies were undertaken in Bangladesh by different researchers to find out a suitable method of induction of labour. In one study carried out by Amiruzzaman[11] among 65 patients, the mean age of patients was 24.65 years and in this study it is 24.08 ±3.25 years, which is almost similar. But out of 48 vaginal delivery 83.33% patients needed single dose of oral Misoprostol tablet and 16.67% needed more than one dose. But in this study 51.20% cases needed one dose of vaginal Misoprostol and 48.80% needed more than one tablet. Regarding Neonatal outcome in this study there was one fresh stillbirth such untoward outcome had not occurred in this study.

Table 2a: Neonatal Outcomes among the study population

Neonatal Outcomes	Frequency	Percentage
Healthy baby	55	92%
Asphyxiated baby	5	8%

Another study done by Ashrafunnesa et al[12] in Institute of Post graduate Medicine and Research, Dhaka, undertook a prospective randomized trial. It was performed on one hundred primigavid women between 37 & 42 weeks of gestation, with singleton pregnancy, cephalic presentation which are similar to this study, but she studied on unfavourable cervix which is dissimilar to the study. In that study efficiency of prostaglandin E_2 intracervical gel in induction of labour in a group primigavid women with unripe cervix was assessed and compared with another group with similar characteristics using oxytocin infusion and artificial rupture of membrane. The apgar score at 1 and 5 minute interval showed no statistically different from those of oxytocin infusion group.

Table 2b: Neonatal Outcomes among the study population

Neonatal Outcomes	Mean±SD	Range
Apagar score at 1 min	7.2±2.3	4-10
Apgar score at 5 min	9.46±3.6	6-10
Birth weight (kg)	2.94 ±1.5	2-3.5

This study can also be compared with other studies which were undertaken in abroad. The most studies were comparative studies which revealed that vaginal Misoprostol is superior to oral Misoprostol in many respect. In one study done by Kenedy et al[13], the mean age of the patients was 26.6 years and mean cervical score was 6.6. But in this study the mean age was 24.08±3.25 years and mean Bishop's score was 6.2±1.76. According to that study Prolonged Pregnancy occupied the top of the list which was 52% and Hypertensive disorder of pregnancy was next in order those are same in this study.

Toppozada et al[14] 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 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.

Fisher et al[15] in Kingston General Hospital, Canada, undertook another study with the objective to determine the efficacy of oral versus vaginal Misoprostol. Oral and vaginal dose were administered at an interval of 3 hours and 6 hours respectively. There was no difference between the groups with respect to mode of delivery or neonatal outcome. In that study the researchers found that vaginal Misoprostol administered every 6 hours was more effective for induction of labour than oral Misoprostol administered every 3 hours.

Conclusion

In conclusion there is no perinatal death in the misoprostol induced delivery; however, neonatal asphyxia is found in few cases as an adverse outcome. Therefore, the use of misoprostol is safe for the good neonatal outcome. However it should be used judiciously so that the complications can be avoided.

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