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Research Article

**COMPARISON OF ORAL MISOPROSTOL WITH
PROSTAGLANDIN E2 FOR INDUCTION OF LABOUR WITH
PV LEAKING AT TERM WITH UNFAVOURABLE BISHOP
SCORE IN A TERTIARY CARE SETTING OF PAKISTAN**Dr. Shamin Fazal¹, Dr. Masooma Mushtaq², Dr Sidra Batool³¹Pakistan Institute of Medical Sciences, Islamabad (PIMS)²Government Nawaz Sharif Hospital Yakki Gate, Lahore³BHU, Bhaka Bhattian Hafizabad

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Abstract:

Introduction: Induction of labour at term is a common obstetric intervention. Induction of labour is the artificial initiation of labour before its spontaneous onset for the purpose of delivery of the fetoplacental unit using mechanical or pharmacological methods. **Objectives:** The main objective of the study is to compare the oral misoprostol with prostaglandin E2 for induction of labour with PV leaking at term with unfavourable bishop score in a tertiary care setting of Pakistan. **Material and methods:** This cross-sectional study was conducted in Pakistan Institute of Medical Sciences, Islamabad (PIMS) during June 2019 to December 2019. The data was collected with the permission of ethical committee of hospital. The data was collected from 200 patients. In each case, detailed evaluation was carried out by complete history, general physical and systemic examination at the time of admission. **Results:** The data was collected from 100 patients. There was no significant difference with respect to the mean age and estimated gestational age between the groups. Most patients had an unfavourable cervix. The mean pre-induction modified Bishop's score was 3.23 ± 0.67 . Ten percentage of patients had pre-induction modified Bishop's score of 0–2, 86.5 % of patients had pre-induction modified Bishop's score of 3–4, and 3.5 % of patients had pre-induction modified Bishop's score of 5.

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INTRODUCTION:

Induction of labour at term is a common obstetric intervention. Induction of labour is the artificial initiation of labour before its spontaneous onset for the purpose of delivery of the fetoplacental unit using mechanical or pharmacological methods. The goal of labour induction is to stimulate uterine contractions before spontaneous onset of labour, resulting in vaginal delivery [1]. Cheaper alternatives, stable at room temperature, have the potential to produce substantial cost savings in developing countries and allow safe induction of labour in those countries which cannot provide pharmacological induction of labour. Misoprostol, a synthetic prostaglandin E1 analogue, presents low cost, storage at room temperature, and widespread availability [2].

The usual options for induction of labour in women with pV leaking are medical methods including oxytocin, prostaglandins and combination of both. Oxytocin only affects uterine contractions so is less likely to be effective in presence of unfavourable cervix. Prostaglandins especially PGE2 have been used successfully for cervical ripening and for induction of labour since early 1970's, however, these are expensive and require refrigeration for storage [3].

Misoprostol, which is a methyl ester of prostaglandin E1 is a recent addition to the list of the prostaglandins. It was originally marketed for the treatment of duodenal ulcer but also has uterotonic properties and is useful for cervical ripening [4]. It is not licensed at present for the induction of labour, but various groups successfully used the agent by oral or sublingual routes for the induction of labour on the basis of its effect on uterine contractions. Misoprostol is a unique prostaglandin E1 analogue. Tablets, marketed for anti-inflammatory drug-induced gastric ulceration, are stable and inexpensive. The use of misoprostol in pregnancy has been reviewed since long [5].

Certain disadvantages are associated with oxytocin use like need to administer it by intravenous route, lack of stability at room temperature, shorter shelf life, and being relatively expensive. Misoprostol has advantages of being easy to use, convenient administration by various routes like the vaginal, sublingual and oral, being stable at room temperature, having a longer shelf life, and being relatively inexpensive [6].

Objectives

The main objective of the study is to compare the oral misoprostol with prostaglandin E2 for induction of labour with PV leaking at term with unfavourable bishop score in a tertiary care setting of Pakistan.

MATERIAL AND METHODS:

This cross-sectional study was conducted in Pakistan Institute of Medical Sciences, Islamabad (PIMS) during June 2019 to December 2019. The data was collected with the permission of ethical committee of hospital.

The data was collected from 200 patients. In each case, detailed evaluation was carried out by complete history, general physical and systemic examination at the time of admission. Ruptured membrane was diagnosed by sterile speculum examination. Vaginal examination was carried out under sterile condition to assess Bishop Score. Fetal wellbeing was assessed by admission cardiotocography (CTG) in each case. Induction of labour with misoprostol was planned 6 hours after rupture of membranes.

Data collection

The data was divided into two groups. All women in the group A were induced with oral misoprostol 50 µg, 2 doses with an interval of 4 hours, while the patients in the group B were induced with sublingual misoprostol 25 µg, 2 doses 4 hours apart. However, the second dose was only given in both groups if Bishop score remained unfavourable and the uterine contractions did not start or were mild at that time. Outcome measures of the study were induction to delivery time, augmentation with oxytocin, tachysystole. Foetal heart rate and uterine activity were continuously monitored by electronic foetal heart rate monitor. Temperature, pulse, blood pressure, and occurrence of any side effects of the drug monitored.

The data was collected and analysed using SPSS version 19. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 100 patients. There was no significant difference with respect to the mean age and estimated gestational age between the groups. Fifty women (group A) received oral misoprostol while other 50 women (group B) were prescribed the drug sublingually for induction of labour. Oxytocin infusion was given for augmentation of labour, if progress of labour was slow in the active phase.

Most patients had an unfavourable cervix. The mean pre-induction modified Bishop's score was 3.23 ± 0.67 . Ten percentage of patients had pre-induction modified Bishop's score of 0-2, 86.5 % of patients had pre-induction modified Bishop's score of 3-4, and 3.5 % of patients had pre-induction modified Bishop's score of 5. The mean modified Bishop's score at 6 h after induction was

5.18 ± 0.87. 24.5 % of patients had modified Bishop's score of 5–8 at 6 h after induction.

Table 01: Analysis of outcomes expressed as *n* (%), mean (SD)

No. of randomized trails		200
Primary outcome		
1.	Induction to delivery interval	14.16 ± 3.45 h
2.	Rate of LSCS	<i>n</i> = 39 (19.5 %)
Secondary outcome		
1.	Mean no. of doses required for successful outcome	0.4
2.	Mode of delivery	
	Vaginal	<i>n</i> = 61 (80.5 %)
	LSCS	<i>n</i> = 39 (19.5 %)
3.	Oxytocin augmentation	
	Required	<i>n</i> = 62 (31 %)
	Not required	<i>n</i> = 38 (69 %)

In particular, there were no serious side effects with misoprostol solution. Ten percentage of patients had nausea, and 5.5 % of patients had vomiting. The incidence of tachysystole was only 3 %.

DISCUSSION:

Low-dose oral misoprostol solution for induction of labour is effective in achieving vaginal delivery within 24 h, less LSCS rate, lower uterine hyper stimulation syndrome, lower foetal distress, effective as far as safety of mother and baby is concerned [7]. Lowering the dose of misoprostol does not seem to result in lower rates of vaginal delivery; indeed, the converse seems to have been the case with significant lower LSCS rates as compared to other methods of induction of labour [8-9]. This can be explained on the basis of frequency and strength of contractions that determine the outcome of labour. High-frequency contractions may reduce the efficiency of myometrial acidemia. This provides a mechanism by which lower-frequency doses of misoprostol can be more efficient than higher doses [10-11].

CONCLUSION:

It is concluded that Sublingual misoprostol in dose of 50 ug has the same efficacy and safety profile as compared to 25 ug oral misoprostol for induction of labour in primigravida at term with Leaking.

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