

## Effects on Induction of Labour by Intravenous Oxytocin in Multiparous in Dhaka National Medical College & Hospital

Pervin MS<sup>1</sup>, Begum MMP.

### Abstract

*Aim of the study was to determine the effectiveness and safety intravenous oxytocin in induction of labour in multigravida and to detect maternal and foetal outcome and also reduce the rate of caesarean section.*

*A prospective, randomized trial was carried out in one hundred singleton pregnant women admitted in Dhaka National Medical Hospital during the period of January 2006 to December 2006.*

*Women who had unfavorable cervix (Bishop's score < 6) were selected. 50 of them received intravenous Oxytocin starting from 10 mU/ml up to 40mU.*

*Thirty – six patients out of 50 patients of Oxytocin group achieved normal vaginal delivery. Rest fourteen patients ended by caesarean section. 66% of this group delivered within 10 hours. The maximum required dose was 40mU/ml.*

*From the study it was found that intravenous oxytocin well tolerated in induction of labour in unfavorable cervix.*

*It certainly reduces the number of caesarean section. It is cost effective.*

*Maternal complications were PPH 2% .Neonatal outcome were satisfactory.*

### Introduction

Induction of labour should be simple, safe, effective and preferably non invasive. The success of induction depends to a large extent on the consistency, compliance and configuration of the cervix.

Induction of labour is a standard obstetrics approach in properly selected patients. It is a method by which initiation of uterine contraction prior to their onset leading to cervical dilatation and effacement. A long induction delivery interval inevitably leads to important complications compliance and configuration of the cervix.

The unripe cervix remains a well-recognized impediment to the successful induction of labour. A simple efficient method of ripening the cervix before induction is, therefore, clearly of use. The main indications for medical induction of labour are PIH, pre-eclampsia, diabetes in pregnancies, Rh-incompatibilities, APH, IUGR, IUD and others medical disorders in pregnancy.

1. Corresponding Author:  
Dr. Mst. Shahana Pervin, MBBS, MCPS, FCPS  
Senior Medical officer  
Department of Gynae & Obs  
Dhaka National Medical College.
2. Dr. Mst. Monowara Begum, MBBS  
Senior Medical officer  
Department of Gynae & Obs  
Dhaka National Medical College.

There are various methods by which labour may be induced with definite advantages and disadvantages, among them intravenous oxytocin are powerful agent over the decades oxytocin have been used quite frequently to effect cervical ripening intravenous oxytocin produce long lasting continuously increasing uterine contraction while no regular contractility could be seen in oral administration.

### Materials and Methods

This was a prospective, randomized clinical trial. Study subjects were the patients who came to Dhaka National Medical College & Hospital during the study period for delivery purpose. The methods were explained to the patients and only who volunteer were finally select for study. Prior to interview informed consent were taken from every patient.

Patients who met the selection criteria were interviewed and recruited in the study. The study was conducted at the department of Gynae and Obstetrics in DNMIH. Randomization was from simple randomization table. The responded were divided into two groups. The first group was oxytocin where induction was given intravenous oxytocin.

### Results

The results are now presented in figures and tables. The description highlights the main feature. In all here were a total of 100 pregnant women selected. Among them the total 50 women were in intravenous oxytocin.

Table-1: Demographic and Gravidy Chart

| Age Years | Oxytocin | %   | Gravidity       | Oxytocin | %   |
|-----------|----------|-----|-----------------|----------|-----|
| 20-25     | 34       | 68% | Prime           | 25       | 50% |
| 26-30     | 12       | 24% | 2 <sup>nd</sup> | 15       | 30% |
| 31-35     | 3        | 6%  | 3 <sup>rd</sup> | 7        | 14% |
| 36-40     | 1        | 2%  | 4 <sup>th</sup> | 3        | 6%  |

From table one it was found that out of 50 patients who received Oxytocin, 34(68%) were in the age group of 20-25 years, 12(24%) were in age group 26-30 years, 3(6%) and 1(2%) were in the age group 35-40 years. Out of 50 patients who received oxytocin 25 are prime 15 are 2nd, 7 are 3rd, and 2 are 4th gravida.

Table-2: Indications of Oxytocin and LUCS

| Indications          | Oxytocin | %  | Indications      | Oxytocin | %  |
|----------------------|----------|----|------------------|----------|----|
| Post dated pregnancy | 35       | 70 | Failed induction | 7        | 14 |
| PE                   | 1        | 2  | Foetal distress  | 7        | 14 |
| PIH                  | 6        | 12 |                  |          |    |
| LFM                  | 5        | 10 |                  |          |    |
| RH-Negative          | 1        | 2  |                  |          |    |
| IUD                  | 2        | 2  |                  |          |    |



From table two it was found that maximum indication of induction were post dated emergency. Then pregnancy induced hypertension then less foetal movement then others.

Table-3: Mode of Delivery in Relation to gravidity

| Mode of delivery | Prime |    | Multi |    |
|------------------|-------|----|-------|----|
|                  | O     | %  | O     | %  |
| NVD              | 12    | 24 | 24    | 48 |
| LUCS             | 10    | 20 | 4     | 8  |

Table -3: Showed 24% prime &48% multi delivered vaginally and 20% prime & 8% multi patient required LUCS.

## Discussions

There are many mothers and foetus died at the time of delivery. To decrease the maternal and foetal death rate we can perform the induction of labour in a properly selected patient.

Death during delivery is a common complication in our country<sup>1</sup>. The rate of maternal and foetal death is very high in Bangladesh. Induction is a method by which initiation of uterine contraction prior to their onset leading to cervical dilatation and effacement and delivery of a baby at 3rd trimester. Commonest indication for induction of labour in Bangladesh and worldwide are prolonged pregnancy, pregnancy induced hypertension, premature ruptured membrane, pre- eclampsia<sup>2</sup> etc. However, this can be a costly affair when the cervix is unfavorable for delivery.

For cervical ripening various methods and materials are used. More recently prostaglandin analogues have been advocated for labour induction<sup>3</sup>.

PGE1<sup>2</sup> analogue have been widely used for labour induction in last few years for its efficacy<sup>4</sup>.

During this study period total number of admitted obstetrics patients was 2552. Among them hundred patients were recruited for study after informed consent and depending on inclusion criteria from 180 Of postdated and other cases. This study was designated to detect the efficacy of oxytocin. In this study 100 patients were studied, 50 in each group. In this present study dose schedule was for intravenous oxytocin 5 unit of oxytocin in 500ml a rate of 30 drop/m to initiate contraction<sup>5</sup>.

In this study demographic characteristics of mother showed oxytocin were in the aged group of 20-25 years. Regarding parity 50% of oxytocin group were multiparous<sup>6</sup>.

Among multiparity 50% of oxytocin group. Indication of labour in this study post dated pregnancy occupied the top then LFM them PIH then others<sup>7</sup>.

Induction delivery interval was less in multigravida 3-5 hours where cervical scoring were >5. Induction delivery interval >15 hours in primigravida. Whose cervical scoring were <3-4. In this study failed induction occurred in both group (12% of intravaginal prostaglandin group and 14% intravenous oxytocin group)<sup>8</sup>.

There were differences in mode of delivery in both primi and multigravida. In primi patient vaginal delivery occurred more in of intravaginal misoprostol group<sup>9</sup> and in multiparous

patient vaginal delivery occurred more in intravenous oxytocin group. Caesarean section rate was in misoprostol group were in 22% and in oxytocin 28%.

Several studies were undertaken in Bangladesh by different researchers to find out a suitable method of induction of labour previously. Dewan F (1995)<sup>9</sup> showed in her study that Foley's catheter was an effective method of induction of labour. Induction delivery interval was shorter in case of Foley's catheter group than that of sweeping of membrane group.

Prostaglandin E2 was found more effective in a comparative study between oxytocin and prostaglandin E2 group done by Ashrafunnessa in 1997.

Ferdous J showed that intravaginal misoprostol was equally effective in induction of labour as induction by Foley's catheter group in 2002.

The present study also establishes the effective use of intravenous oxytocin in patient with cervical scoring. Induction of labour with cervical scoring.

Another observation during this study is proper selection of patient is a vital factor for induction and outcome.

A well-designed clinical trial was carried out to detect the safety & efficacy of intravenous oxytocin on cervical ripening and induction of labour. For this study, 100 women who were admitted at Dhaka National Medical College Hospital were selected during the study period, January 2006-December 2006 oxytocin is used for induction of labour. Oxytocin are currently most commonly accepted widely used agents for their ripening of unfavorable cervix and for induction of labour in the developed countries.

In this study 50 patients were selected for intravenous oxytocin. Higher Bishop's scoring group shows result in oxytocin in oxytocin group. Result of both groups in term of induction-delivery interval, mode of delivery and foetal and maternal outcome were compared.

Oxytocin is not free from side effect but close monitoring and immediate appropriate management of the complications are to be considered mandatory during induction of labour. The response rate was satisfactory with intravenous use of Oxytocin for induction of labour but a set schedule of Oxytocin dosage could not be recommended from the study.

Though pregnancy is a physiological process, makes the women and her family anxious, insecure and uncertain. For the obstetrician it is very important issue as they are concerned for the safety of both mother and baby. Induction of labour with unripe cervix is difficult. In this study oxytocin is used for ripening of Cervix and for induction of labour. In our study it was found that intravenous oxytocin is very effective for induction of labour with unfavorable cervix. In conclusion, it can ripen the cervix and increases the vaginal delivery rate. It reduces the rate of caesarean section and its complications. So it helps us by reducing hospital stay, treatment cost and manpower. No adverse effects of oxytocin like drug reaction, febrile morbidity were observed. But in some studies when oxytocin is used in high doses it may causes uterine hyper stimulation and water intoxication. So,

close monitoring and immediate appropriate management of the complications are not to be considered mandatory during its use. Perinatal outcome is also well in this study and no fetal morbidity was found.

To arrive at a definite conclusion, a long term well designated clinical trial with a bigger sample size should be carried out to assess the safety, efficacy and acceptability of this induction method.

### References

1. Ashrafunnessa, induction of labour Bangladesh medical res Coune Bull.1997;23:66-67.
2. Dewan et al, Comperative study of induction of labour by Foley'e Oxford Hand Book of Obstetrics and Gynaecology,Oxford University Press, New Delhi. 2004;350.
3. S.Arulkumaryl, Obs. & Gynae. For prostaglandin,Orient Longman Calcutta, India, 2nd edition. 1994;197-202.
4. A.A.Calder Dew Hurt's Tex Book of Obs & Gynae for prostaglandin, 6th London England edition. 1999;252.
5. Oxford Hand Book of Obstetrics and Gynaecology,Oxford University Press, New Delhi, second edition. 2004;350.
6. C S Dawn Text book of obstetrics and Neonatology Calcutta; 273.
7. Keise MJ Prostaglandin in "preinduction cervical ripening" Meta-Analysis of worldwide clinical experience.J Report. 1993;38:89-100.
8. Don Shuwanger, QBGYN net publications "Misoprostol for cervical Ripening and induction of labour". 2003;1-2.
9. DC Dutta, Text book of obstetrics 6th Calcutta: New central Book agency(P) Ltd. 2002;319,110,522.