

# MODE OF DELIVERY AND FETAL OUTCOME IN PATIENTS WITH PROLONGED PREGNANCY UNDERGOING ELECTIVE INDUCTION AT 41 & 41+ WEEKS

Aisha Arif<sup>1</sup>, Nadia Rashid Khan<sup>2</sup>, Laila Zeb<sup>3</sup>

<sup>1,3</sup> Department of Obstetrics and Gynecology, Lady Reading Hospital, Peshawar - Pakistan.

<sup>2</sup> Department of Obstetrics and Gynecology, DHQ Hospital, Dir Upper - Pakistan.

**Address for correspondence:**

**Dr. Aisha Arif**

Registrar, Department of Obstetrics and Gynecology Lady Reading Hospital, Peshawar - Pakistan.

E-mail: aisha.arif@yahoo.com

Date Received:

May 15, 2014

Date Revised:

October 28, 2014

Date Accepted:

November 30, 2015

## ABSTRACT

**Objective:** To determine mode of delivery and fetal outcome in patients with prolonged pregnancy undergoing elective induction at 41 & 41+ weeks.

**Methodology:** This study was carried out on 150 patients at Department of Obstetrics and Gynecology, Unit "A" Postgraduate Medical Institute Lady Reading Hospital Peshawar. All singleton uncomplicated pregnancies with vertex presentation at 41 weeks and above admitted at ward were included in the study. Exclusion criteria were strictly followed. Gestational age was calculated by last menstrual period (LMP) or from first trimester scan. All women with 41 and 41+ week's gestation were offered induction. All the information including neonatal notes was recorded.

**Results:** Among 150 patients 135 (90%) were induced with tablet prostaglandin E<sub>2</sub> and 15 (10%) were induced with prostaglandin E<sub>2</sub> gel. Among 150 patients 76 (51%) patient were primigravida, 61 (40%) patient were multigravida and 13 (9%) patient were grand multigravida. 114 (76%) patients had spontaneous vaginal delivery, 14 (9%) patients had vacuum vaginal delivery and 22 (15%) patients had caesarean section. 134 (89%) babies had APGAR Score >7 and 16 (11%) babies had score <7. 13 (9%) babies had birth weight <3kg, 125 (83%) had 3-3.9kg, 10 (7%) had 4-4.4kg and 2 (1%) had more than 4.5kg. Only 3 (2%) babies were admitted to NICU.

**Conclusion:** It can be stated that most of patients undergoing induction of labour at 41 weeks and 41+ weeks gestation delivered by normal vaginal delivery had good fetal outcome.

**Key Words:** Prolonged pregnancy, Induction of labour, Fetal outcome

This article may be cited as: Arif A, Khan NR, Zeb L. Mode of delivery and fetal outcome in patients with prolonged pregnancy undergoing elective induction at 41 & 41+ weeks. *J Postgrad Med Inst* 2015; 29(4): 227-30.

## INTRODUCTION

Pregnancy beyond 294 days often involves maternal concern about delay in expected date of delivery. The incidence of postdated pregnancy is between 4 – 14 %<sup>1</sup>. This wide variation is due to the difficulty in calculation of accurate date of delivery. Prenatal risk factors identified in post term pregnancies are body mass index > 35, fish consumption in 1<sup>st</sup> trimester and male gender<sup>2</sup>. Post term pregnancy is associated with increased maternal & fetal risks. Maternal risks include; emotional stress, increased incidence of caesarean section, severe perineal injury and postpartum haemorrhage<sup>3</sup>. In fetus there are more chances of macrosomia, meconium aspiration syndrome and increased perinatal mortality rate. At 41 week's gestation the perinatal mortality rate is 9/1000 live births and it continues to rise thereafter<sup>4</sup>. Meta-analysis of randomized controlled trials have shown that induction of labour at 41 weeks gestation is

associated with fewer perinatal deaths without increasing caesarean section rate<sup>5</sup>. RCOG guidelines has also recommended that women should be offered induction after 41 weeks<sup>6</sup>.

Two strategies of managing post-term pregnancy are: (a) Immediate induction and (b) Expectant management<sup>7</sup>.

Women who decline induction of labour at 41 weeks should be offered increased antenatal monitoring from 42 weeks, consisting of twice weekly Cardiotocography (CTG) and ultrasound estimation of single deepest amniotic pool. Depth of < 8cm indicates increased fetal risks<sup>8</sup> and active early intervention at 42 weeks is warranted to reduce perinatal morbidity and mortality<sup>9</sup>.

There is traditionally held view among obstetricians that induction of labour increases the likelihood of delivery by caesarean section. A number of secondary analysis were carried out by Crowley and was shown

that induction of labour for post term pregnancy does not increase likelihood of caesarean section irrespective of parity, cervical ripening or method of induction<sup>10</sup>.

Purpose of our study was to determine mode of delivery and fetal outcome in patients with prolonged pregnancy undergoing elective induction at 41+ weeks.

## METHODOLOGY

This Descriptive study (case series) was carried out on 150 patients at Department of Obstetrics and Gynecology, Unit "A" Postgraduate Medical Institute Lady Reading Hospital Peshawar from 27<sup>th</sup> March 2010 to 26<sup>th</sup> Jan 2011. An informed consent was obtained from all patients for including them in this study and using their data in the study.

All singleton, uncomplicated pregnancies with vertex presentation at 41 weeks and above admitted at ward through casualty, out-patient department (OPD) or private clinics were included in this study. Other cases with intrauterine fetal demise (before admission), fetus with lethal malformations, mal-presentations, planned caesarean section for reasons other than post term pregnancies and women with post term pregnancies with coexisting problems e.g. Eclampsia or diabetes were excluded from the study.

Complete obstetrical history was taken from all patients. Gestational age was calculated by last menstrual period (LMP) or from 1<sup>st</sup> trimester scan.

All women with 41 and 41+ week's gestation were offered induction. All the information including neonatal notes was recorded. All the data was analyzed using SPSS 10 software. Mean and standard deviation was calculated for quantitative variables like age, gestational age, and birth weight. Frequencies and percentage were calculated for categorical variables like gravidity, parity, mode of induction of labour, mode of delivery, fetal distress and fetal mortality.

## RESULTS

This was a descriptive study of 150 gravid patients with prolonged pregnancy admitted in Obstetrics and Gynecology Department of Lady Reading Hospital, Peshawar.

All patients had gestational age above 41 weeks. Gestational age of all 150 patients is shown in table no I.

Out of 150 patients, n=76 (51%) patients were primigravida, n=61 (40%) patients were multigravida and n=13 (9%) patients were grand multigravida.

Among 150 patients, 135 (90%) were induced with tablet prostaglandin E2 and 15 (10%) were induced with prostaglandin E2 gel.

Fetal distress among 150 patients was observed in n=16 (11%) patients, while in n=134 (89%) patients fetal distress did not occurred.

Majority of our patients underwent spontaneous vaginal delivery. Mode of delivery of all patients is shown in table no II.

Majority of babies were healthy after delivery. Fetal outcome of all 150 babies is shown in table no III.

Most babes had birth weight between 3.00 to 3.09 kg. Birth weight of all babes is shown in table no IV.

Among 150 patients, n=3 (2%) patients were admitted to NICU while the remaining n=147 (98%) patients were not admitted.

## DISCUSSION

Post term pregnancy refers to a pregnancy that extends to or beyond 42 completed weeks of gestation, it occurs with approximate frequency of 3-12%<sup>11</sup>.

In our study 28% cases had gestational age ranges between 41<sup>+5</sup> to 41<sup>+6</sup> weeks, 51% cases had gestational age ranges between 41 to 41<sup>+4</sup> weeks and 21% cas-

**Table 1: GESTATIONAL AGE (n=150)**

| Gestational age        | Frequency | Percentage |
|------------------------|-----------|------------|
| 41 Weeks               | 21        | 14%        |
| 41 <sup>+1</sup> Weeks | 05        | 03%        |
| 41 <sup>+2</sup> Weeks | 19        | 13%        |
| 41 <sup>+3</sup> Weeks | 08        | 05%        |
| 41 <sup>+4</sup> Weeks | 24        | 16%        |
| 41 <sup>+5</sup> Weeks | 27        | 18%        |
| 41 <sup>+6</sup> Weeks | 15        | 10%        |
| 42 and above           | 31        | 21%        |
| Total                  | 150       | 100%       |

**Table 2: Mode of Delivery (n=150)**

| Mode of Delivery             | Frequency | Percentage |
|------------------------------|-----------|------------|
| Spontaneous Vaginal Delivery | 114       | 76%        |
| Vacuum Vaginal Delivery      | 14        | 09%        |
| Caesarean Section            | 22        | 15%        |
| Forceps Delivery             | 00        | 00%        |
| Total                        | 150       | 100%       |

**Table 3: Fetal Outcome (n=150)**

| Fetal Outcome                           | Frequency | Percentage |
|---|-----------|------------|
| Healthy<br>(APGAR Score 7/10 to 10/10)  | 134       | 95%        |
| Morbidity<br>(APGAR Score 5/10 to 6/10) | 16        | 04%        |
| (APGAR Score 1/10 to 4/10)              | 00        | 00%        |
| Total                                   | 150       | 100%       |

**Table 4: Birth Weight (n=150)**

| Birth Weight | Frequency | Percentage |
|--------------|-----------|------------|
| <3kg         | 13        | 09%        |
| 3–3.9kg      | 125       | 83%        |
| 4–4.4kg      | 10        | 07%        |
| > 4.5kg      | 02        | 01%        |
| Total        | 150       | 100%       |

es had gestational age above 42 weeks. Similar results were shown in the study done by Richard FT, 38% cases had gestational ranges between 41+5 to 41+6 weeks, 34% cases had gestational age ranges between 41 to 41+4 weeks and 28% cases had gestational age ranges above 42 weeks.

Most of the cases in our study were primigravida i.e. 51% while 40% were multigravida and only 9% cases were grand multigravida. The same results were shown by Caughey AB, in his study, where primigravida were 56%, multigravida were 42% and only 2% cases were great grand multigravida, which shows strong association of parity in post term pregnancy<sup>12</sup>.

Our study shows that 11% cases had fetal distress where as 89% patients did not have fetal distress. The contrary results have been shown in study done by Caughey AB, in which 38% patients had found with fetal distress<sup>12</sup>.

Our study shown that most of the cases had spontaneous vaginal delivery i.e. 76%, 15% had caesarean section and 9% had vacuum vaginal delivery. The same results were found in study done Spellacy WN in which spontaneous vaginal delivery was found in 80% cases, caesarean section in 12% and vacuum vaginal delivery

in 8% cases. Similar figures were also quoted by Aaron B<sup>13</sup>. Caesarean section itself carries its own morbidity and mortality thus making post dates a high risk pregnancy<sup>14</sup>. In our study indications for caesarean section were fetal distress, failed induction, Chorioamnionitis and failure to progress due to Macrosomia. Only 3 Caesarean section were performed for failed induction which shows that induction of labour is not associated with increased caesarean section rate as evidence by RCOG guidelines<sup>6</sup>.

In my study 89% neonates had APGAR Score greater than 7 at 5 minutes while 11% neonates had APGAR Score less than 7 at 5 minutes. This is contradictory to the findings of Bagdady MA who showed 96% cases had APGAR Score greater 7 at 5 minutes and 4% cases had APGAR Score less than 7 at 5 minutes<sup>15</sup>.

In our study 83% cases had birth weight ranges between 3-3.9 kg, 9% had less than 3 kg, 7% had 4–4.4 kg and only 1% had greater than 4.5 kg. The same results were shown in the study done by Bagdady MA in which 80% cases had birth weight between 3–3.9 kg, 10% had less than 3 kg, 8% had 4–4.4 kg and 2% had greater than 4.5 kg<sup>15</sup>.

Moreover these neonates are more commonly ad-

mitted to neonatal intensive care unit as compared to neonates at term<sup>15</sup>. In my study 2% (n=03) neonates were admitted to NICU.

## CONCLUSION

It can be stated that most of patients undergoing induction of labour at 41 weeks and 41+ week's gestation deliver by normal vaginal delivery with good fetal outcome.

## REFERENCES

1. Roberts LJ, Young KR. The management of prolonged pregnancy: an analysis of women's attitude before and after term. *Br J Obstet Gynaecol* 1991; 98:1102-6.
2. Olesen AW, Westergaard JG, Olsen J. Prenatal risk indicators of a prolonged pregnancy. The Danish Birth Cohort 1998-2001. *Acta Obstet Gynecol Scand* 2006; 85:1338-41.
3. Norwitz ER, SnegouShikh VV, Caughey AB. Prolonged pregnancy: when should we intervene? *Clin Obstet Gynecol* 2007; 50: 547-57.
4. Haq AN, Ahsan S, Sher Z. Induction of labour in postdates pregnant women. *J Coll Physicians Surg Pak* 2012; 22: 644-7.
5. Gulmezoglu AM, Crowther CA, Middleton P. Induction of labour for improving birth outcome for women at or beyond term. *Cochrane Database Syst Rev* 2006: 4.
6. Royal College of Obstetricians and Gynaecologists; RCOG Clinical Effectiveness Support Unit. Induction of labour. Evidence-based Clinical Guideline Number 9. London: RCOG Press; 2001.
7. A clinical trial of induction of labour versus expectant management in postterm pregnancy. The National Institute of Child Health and Human Development Network of Maternal and Fetal Medicine unit. *Am J Obstet Gynaecol* 1994;170:716-23.
8. Dasari P, Niveditta G, Raghavan S. The maximal vertical pocket and amniotic fluid index in predicting fetal distress in prolonged pregnancy. *Int J Gynaecol Obstet* 2007; 96:89-93.
9. Iqbal S. Management of prolonged pregnancy. *J Coll physicians Surg Pak* 2004; 14: 274-7.
10. Crowley P. Interventions for preventing or improving the outcome of delivery at or beyond term. *Cochrane Database Sys Rev* 2000.
11. ACOG Committee on Practice Bulletins-Obstetrics. Practice Bulletin. Clinical management guidelines for obstetricians & gynaecologists number. Management of post term pregnancy. *Obstet Gynaecol* 2004; 104: 639-46.
12. Caughey AB, Musci TJ. Complications of term pregnancy beyond 37 weeks of gestation. *Obstet Gynaecol* 2004; 103: 57-62.
13. Aaron B, Naomi E, Washington AE, Escobar GJ. Maternal complications of pregnancy increase beyond 40 weeks of gestation. *Am J Obstet Gynaecol* 2007; 196:155-6.
14. Ohel G, Yaacobi N, Linder N, Younis J. Postdate antenatal testing. *Int J Gynecol Obstet* 1995; 49:145-7.
15. Bagdady MA, Mostafa M, Taufik E, Amer MA, El-Azzazy As. Post date pregnancy monitoring management, perinatal and neonatal outcome. *Egypt Soci Obstet Gynaecol* 2000; 26:453-65.

## CONTRIBUTORS

AA conceived the idea, planned the study, and drafted the manuscript. NRK helped acquisition of data and did statistical analysis. LZ drafted the manuscript and critically revised the manuscript. All authors contributed significantly to the submitted manuscript.