

Effect of Amniotomy in Shortening Duration of First Stage of Labour

ROBINA KAUSAR¹, SIDRA LIAQAT², SHAKILA MANZOOR AHMED³

¹Senior Registrar, Department of Obstetrics & Gynaecology, Avicenna Medical College Lahore

²Woman Medical Officer, BHU Khaliqdad, Hasan Abdal Attock

³Senior Registrar, Safwa General Hospital, Ministry of Health, KSA

Correspondence to: Dr. Robina Kausar email: dr.robinashahzad@gmail.com

ABSTRACT

Aim: To examine the time duration of first stage of labour with and without amniotomy in primigravidas at term presenting in labour room in our settings.

Study design: Comparative/Observational study.

Place and duration of study: Department of Obstetrics & Gynaecology Lahore from 01-10-2010 to 30-03-2011.

Methods: A total of 104 patients of primigravidas at term presenting in labour room were included in this study. Patient's ages were ranging from 16 to 35 years. All the patients were divided by lottery method into two groups, group A and group B. Each group comprised 52 patients. In group A, amniotomy at 3cm was done using aseptic measurements with the help of Kocher's forceps by researcher while in group B, no amniotomy was performed and membranes left. Time duration of 1st stage of labour in minutes was recorded and compared the results between both groups.

Results: The mean age of 22.7±4.8 years and in group B it was 26.1±4.9 years with age range of 16 to 35 years. The mean duration of pregnancy in group A was 38.2±0.8 weeks and in group B was 39.1±1.9 weeks with duration of pregnancy range of 37 to 40 weeks. The mean time duration of 1st stage of labour in group A was 289.7±55.3 minutes and in group B was 386.1±66.8 minutes ranging from 200 to 450 minutes.

Conclusion: The mean duration of first stage of labour is less with amniotomy than without amniotomy in patients presenting in labour room. We observed a significant difference regarding time duration of 1st stage of labour between both groups.

Keywords: Amniotomy, First stage of labour, Shortening of duration of first stage of labour, Primigravidas

INTRODUCTION

Many of studies illustrated that amniotomy procedure is very effective to reduce the time duration of labour. Many of gynecological and obstetrics expertise recommended that amniotomy procedure is very beneficial and useful in reducing the time duration of labour and also it is effected to reduce the maternal risk factors. Amniotomy method is also applied when internal monitoring of fetus is required it is used to obtain the amniotic fluid for visual observation.²

The mechanism of action behind amniotomy is thought to be the release of prostaglandin E₂ (PGE₂) and rise oxytocin level.³ It's typically employed to accelerate labour and was originally thought to decrease caesarean section rates.⁴ Routine early amniotomy appears to be associated with both benefits and risks. Beneficial effect include reducing the time duration in labour and decrease in frequency of abnormal Apgar score at one minute.⁵

This protocol also minimizes the rate of caesarean section for dystocia among nulliparous women and dysfunctional labour.⁶ Women having their first babies are older may cause to ineffective or difficult labour, most often because of deficient uterine action (dystocia). Early management in these cases with amniotomy and oxytocin is very effective to increase the frequency and intensity of uterine contraction (augmentation) when progress of labour is delayed.⁷

Shobeiri et al⁸ determined mean duration of length of first stage of labour 250±50 minutes in amniotomy group and 405±45 minutes in control group.

Long or delayed labour is major cause of hemorrhage and complication and it is also the main cause of maternal

mortality. In developing countries, amniotomy procedure is very effective in term of reducing the duration of labour and it is very useful to reduce the mortality and morbidity rate and also very effective for expertise while selecting the mode of deliver. The current study was conducted to examine the effects of amniotomy in terms of reducing the time duration of labour.

PATIENTS AND METHODS

This randomized controlled trial study was carried out at Department of Obstetrics & Gynaecology, Sir Ganga Ram Hospital Lahore from 01-10-2010 to 30-03-2011. Total 104 patients were included with age ranging from 16 to 35 years. All the patients were equally divided into two groups Group A included 52 patients and Group B 52 patients. Patients who have primigravida (nulliparous), gestational age >37 weeks calculated by LMP and single cephalic pregnancy in spontaneous labour with intact membranes with cervical dilatation of 3cm measured through digital examination were included. Those patients who have malpresentation and malposition on ultrasonography, history of premature rupture of membranes, medical disorders like pregnancy induced hypertension and gestational diabetes, intrauterine growth restriction, low amniotic fluid index were excluded. In group A, amniotomy at 3cm was done using aseptic measurements with the help of Kocher's forceps by researcher while in group B, membranes was left intact as long as possible. Patients were excluded from study if membranes rupture spontaneously at an early stage before 3cm. Patient was monitored for duration of first stage of labour by digital examination. Duration of first stage of labour in minutes was recorded. All the collected data entered into SPSS-20

Received on 30-05-2019

Accepted on 27-12-2019

and analyzed. P-value of <0.05 was significantly considered.

RESULTS

In Group A (amniotomy) 21 (40.38%) patients were ages between 16 to 20 years, 18 (34.62%) patients had ages 21 to 25 years, 12 (23.08%) patient were ages 26 to 30 years and 1 (1.92%) patient had age >30 years. In Group A mean age was 22.7 ± 4.8 . In group B, 6 (11.54%) patients had ages 16 to 20 years, 16 (30.77%) patients were ages of 21 to 25 years, 25 (48.08%) patients had ages 26 to 30 years and 5 (9.62%) patient were ages > 30 years (Table 1). The mean duration of pregnancy in group A was 38.2 ± 0.8 weeks and in group B was 39.1 ± 1.9 weeks (Table 2). The mean duration of first stage of labour in group A was 289.7 ± 55.3 minutes and in group B was 386.1 ± 66.8 minutes. There was significant difference found in both groups with respect to time duration of labour in both groups [$P < 0.05$] (Table 3).

Table 1: Age-wise distribution

| Age (Years) | Group A (n=52) | | Group B (n=52) | |
|---------------|----------------|-------|----------------|-------|
| 16-20 | 21 | 40.38 | 6 | 11.54 |
| 21-25 | 18 | 34.62 | 16 | 30.77 |
| 26-30 | 11 | 23.08 | 28 | 48.08 |
| 31-35 | 1 | 1.92 | 5 | 10.0 |
| Mean \pm SD | 22.7 \pm 4.8 | | 26.1 \pm 4.9 | |

Table 2: Duration of pregnancy

| Duration (Weeks) | Group A (n=52) | | Group B (n=52) | |
|------------------|----------------|-------|----------------|-------|
| 37-38 | 31 | 59.62 | 19 | 36.54 |
| 39-40 | 21 | 40.38 | 33 | 63.46 |
| Mean \pm SD | 38.2 \pm 0.8 | | 39.1 \pm 1.9 | |

Table 3: Duration of 1st stage of labour findings from all patients

| Duration (Minutes) | Group A (n=52) | | Group B (n=52) | |
|--------------------|------------------|-------|------------------|-------|
| 200-250 | 6 | 11.54 | 4 | 7.69 |
| 251-300 | 36 | 69.23 | 12 | 23.08 |
| 301-350 | 5 | 9.62 | 1 | 1.92 |
| 351-400 | 0 | 0 | 6 | 11.54 |
| 401-450 | 5 | 9.62 | 29 | 55.77 |
| Mean \pm SD | 289.7 \pm 55.3 | | 386.1 \pm 66.8 | |
| P value | 0.001 | | | |

DISCUSSION

Amniotomy is a commonly used obstetric intervention; however preliminary data does not support its routine use in labor management. Its use in induction of labor in combination with oxytocin is well established when compared with other methods of induction.^{8,9}

In the present study, mean age of amniotomy was 22.7 ± 4.8 years and in group B, mean age was 26.1 ± 4.9 years (Table 1). A study conducted by Abdullah et al⁹ reported that mean age of the patients in amniotomy group was 24.7 ± 3.2 years and in control group was 24.9 ± 2.9 years, which is comparable with our study. Another study regarding amniotomy demonstrated that the mean age of amniotomy treated patients was 23.8 ± 4.9 years.^{10,11}

This study showed that mean duration of pregnancy in group A was 38.2 ± 0.8 weeks and in group B was 39.1 ± 1.9 weeks. Abdullah et al⁹ also reported that mean gestational age of the patients in amniotomy group was

38.4 ± 1.0 weeks and in control group was 38.6 ± 1.1 weeks, which is comparable with our study.

The current study showed that mean duration of first stage of labour in group A was 289.7 ± 55.3 minutes and in group B was 386.1 ± 66.8 minutes with significant p value of 0.001. Shobeiri et al⁸ reported that mean duration of first stage of labour was 250 ± 50 minutes in amniotomy group and 405 ± 45 minutes in control group, which is comparable with our study. Abdullah et al⁹ also reported that mean duration of first stage of labour was 6.66 ± 1.4 hours in Group-A and 7.66 ± 1.75 hours in Group B showing a significant decrease of 1 hour in duration of labour.

In another study conducted by Anbreen and Majeed⁶ at Khyber Teaching Hospital Peshawar Pakistan and found that mean duration of first stage of labour in amniotomy group was 8 hours and in control group was 9 hours, which also correlated with our study, which also showed that in amniotomy group there was shorter duration of labour, which is comparable with the above study.

The results of the present study showed that duration of labour co-relates with that of Fraser et al¹¹ who also concluded that amniotomy shortens labour in nulliparous women significantly.

CONCLUSION

It is concluded from this study that mean duration of first stage of labour is less with amniotomy than without amniotomy in patients presenting in labour room. There was a statistically significant difference between the two groups.

REFERENCES

- Smyth RMD, Alldred SK, Markham C. Amniotomy for shortening spontaneous labour. The Cochrane Library 2008; 4: 1-72.
- Wolomby JJ, Tozin RR. Amniotomy for shortening spontaneous labour. RHL commentary (last revised: 5 Jan 2009). The WHO reproductive Health Library; Geneva 2010.
- Abdullah A, Saboohi S, Hashami U. Effects of amniotomy versus spontaneous rupture of membrane on progress of labour and foetal outcome in primigravidae. JLUMHS 2010; 9: 33-6.
- Searson S, Blackwell JC. Does routine amniotomy have a role in normal labour? www.jfponline.com 2009; 58: 161a-161d.
- Li N, Wang Y, Zhou H. Effect of routine early amniotomy on labour and health status of foetus and neonate: a meta analysis. Zhonghua Fu Chan Ke Za Zhi 2006; 41: 16-9.
- Anbreen F, Majeed S. The role of amniotomy on duration of labour and its effects on neonatal outcome. J Med Sci 2008; 16: 94-7.
- Wei S, Wo BL, Xu H, Luo ZC, Roy C, Fraser WD. Early amniotomy and early oxytocin for prevention of or therapy for, delay in first stage spontaneous labour compared with routine care. Last assessed as up-to-date: April 15: 2010.
- Shobeiri F, Tehranina N, Nazari M. Amniotomy in labor. Int J Gynaecol Obstet 2007; 96: 197-8.
- Ross MG, Hobel CJ. Normal labour, delivery and the puerperium. Essentials obstet Gynecol 1992; 2:119-34.
- Smyth RMD, Alldred SK, Markham C. Amniotomy for shortening spontaneous labour. Cochrane database of systematic reviews 2007; issue 4. Art. No.: CD006167.
- Sadler LC, Davison T, McCowan LME. A randomized controlled trial and meta-analysis of active management of labour. Br J Obstet Gynaecol 2000;107:909-15.