Tripolitana Medical Journal; 2015, Vol. 4, No. 1, pp. 19 - 22

Reseach Article

ISSN 2077-5628

Position of Women During Second Stage of Labour and Maternal, Neonatal Outcome

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Recieved 9th April 2015/ Accepted 2nd June 2015

ABSTRACT

The second stage of labour was defined as a stage of fetal expulsion and begins when the cervical dilatation is complete and ends with fetal delivery, it is duration about 50min for nulliparous and about 20min for multiparas, but it can be highly variable. The objective of this study was to determine the effect of different positions of pregnant women in second stage of labour on duration of second stage and the maternal and the neonatal complications. The study was randomized controlled trial, conducted in Tripoli Medical Center during 2012. The study includes 440 pregnant ladies in labour with no antenatal or obstetric complications, they divided into two groups, each group deliver their babies in certain position (supine, upright), and the duration as well as complication of the second stage were determined for both groups.

The mean duration of second stage for the group who are in supine position was 22.64 while the mean duration for other group who are in upright position was 17.32, which was statistically significant by using T-student test (P=0.001) while the effect of different positions of second stage on complication of labour like first or second or third degree perineal tear was not significant, (P>0.05). Also perinatal outcome shows no significant difference between the two groups.

In conclusion the different positions of second stage of labour do not decrease the complication of second stage or improve perinatal outcome but only show decrease in duration of second stage.

Keywords - *Second stage of labour; Duration of different positions; Complication of second stage; Fetal outcome.*

INTRODUCTION

***Pushing during the second stage of labour*:** In a study of healthy nulliparous women who had received

In some respects it is undesirable to separate consideration no formal. childbirth education and were allowed to push

of care during the second stage of labour from care during spontaneously without any directions from those caring

the first stage. Nevertheless, the second stage is a period for them, three to five relatively brief (4-6 seconds)

during which the whole tempo and nature of activities bearing-down efforts were made with each contraction. surrounding labour tend to change it. It is a time when The number of bearing down efforts per contraction women may become vulnerable and dependent on increased as the second stage progressed, and most were influence of those who assist them.[1] Discussion about accompanied by the release of air. The minority of bearing aspects of care is not easy at this time, and this leaves down efforts that were not accompanied by the release the caregiver with even more than usual responsibility to of air were accompanied by the brief periods of breath holding (lasting less than 6 seconds). Despite this pattern

safeguard the interests of the mother and baby. of breathing, the average length of the second stage of

***Diagnosis of the onset of the second stage of labour*:** labour was 45 minutes, and did not exceed 95 minutes.

By definition, the second stage of labour, which ends with Although sustained bearing-down efforts accompanied by the birth of the baby, begins when the cervix is fully dilated, breath holding result in shorter second stage of labour.3 this anatomical onset may or may not coincide with the ***Position during the second stage of labour*:**

onset of the expulsion phase, when the mother begins to The use of upright positions such as standing, kneeling, feel the urge to bear down, in some women, the urge to sitting on a specially designed chair, or squatting for bear down occurs before the cervix is fully dilated; for delivery is common in many cultures. Yet, in institutions women have been expected to adopt recumbent positions others this urge may not come until well after full cervical for childbirth. Constraining women to adopt positions

dilatation is achieved. The mother herself may signal the that they find awkward or uncomfortable can only be transition into the expulsive phase in words, by action, by justified if there is good evidence that the policy has a change in the expression on her face, or in the way she important advantages for the health of either the mother may squeeze her companions hand, if the presenting part

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and her baby. Upright posture has been compared with is visible at the introits, full dilatation is easily confirmed. [2] the recumbent position during childbirth in several trials.

In most of these, either specially designed obstetric chairs or a back-rest or wedge were used to support the upright positions. [4] The mean duration of the second stage of labour was found to be shorter with the upright position in most of the trials, there is no evidence that position during the second stage of labour affects the incidence of either operative delivery or perineal trauma. More mothers in the groups that used upright positions during the second stage of labour expressed a positive response about the position. The perceived advantages included less pain and less backache. A majority of women wished to use a birth chair or upright position for a subsequent birth. Women using birth chairs during the second stage of labour are at increased risk of postpartum hemorrhage. This tendency to postpartum hemorrhage is likely to arise from perineal trauma exacerbated by obstructed venous return. Excessive perineal oedema and hemorrhoids have been observed in women who are upright in birth chairs for extended periods of time. Abnormal fetal heart rate patterns seem to be less frequently observed, and mean umbilical arterial PH tends to be higher in babies. Born to women who use the upright position for delivery, although the differences observed do not achieve statistical significance. These apparent effects may be due to the avoidance of aortocaval compression[5] associated with lying down. This alteration in fetal acid base status was also observed in two trials comparing the effects of the supine position with a 15 left lateral tilt. Babies whose mothers were lying flat on their backs had lower umbilical cord arterial PH values than those whose mothers were lying on their left side

***Duration of the second stage of labour*:**

The second stage of the labour has been considered to be a time of particular risk to the fetus for well over a century. Echoes of this view exist today in the widespread policies of imposing arbitrary limits on the length of the second stage. Statistical associations have been demonstrated between prolonged second stage of labour and obviously undesirable outcome such as perinatal mortality, postpartum hemorrhage, puerperal febrile morbidity, and neonatal seizures, as well as with outcomes of less certain significance relating to the acid-base status of the baby at birth. [5] On their own, these associations are not sufficient justification for concluding that the length of the second stage of labour per se is the crucial variable. So, shorting the length of the second stage of the labour by active pushing or operative delivery which can modify the decline in fetal PH that tend to occur over the course of labour. Can be but, without some evidence that this policy has a beneficial effect on improving outcomes, the maternal trauma and occasional fetal trauma resulting from the increased surgical interference. Maternal exhaustion can occur at any time during labour, but is more likely to occur during the second stage when the extra effort of pushing is added to the stress of the contraction. If the mother is not unduly distressed and is not actively pushing (particularly when she has epidural analgesia), there is no reason to think that the second stage is any more likely to cause exhaustion than the first stage.[6]

MATERIALS AND METHODS

This study which was conducted in Tripoli Medical Center, which is a tertiary referral University center. In 2012. eligible patients include pregnant women at term pregnancy, singleton pregnancy, cephalic presentation in labour. They include 440 pregnant women whose randomly collected their ages range from 20-45 years old, without medical or obstetric problem or antenatal complication, they are divided in two groups, each group attend certain position (upright or supine) and the duration of the second stage as well as the maternal, neonatal complication were determined, according to defined criteria labour onset was defined by regular uterine contraction and cervical dilation of at least 4cm, second stage was defined when full dilation of cervix attained all eligible patients received intrapartum care., maternal position were considered as follow:(1) recumbent or supine position, pregnant women lying on her back or on her side, (2) upright position or semi recumbent where the women trunk tilted backward 30 degree to vertical.

***Statistical analysis*:**

The data which were included in the study was expressed in frequency, percentage, mean ± SD, while comparison of these variables were done using *T*-Student test and Chi-square test. A $P<0.05$ was considered statistically significant. Statistical calculations were done using SPSS (Statistical Package for Social Science).

RESULTS

The study include 440 pregnant women in labour, the participant were divided into two groups, group A deliver in supine position and group B in upright position, and the duration as well as complication of second stage all were estimated, perinatal outcome also taken. Our results show the different duration of second stage of labour which ranged from 15 to 75 min (Table 1 and Figure 1). Table 2, shows the mean duration of second stage of labour in relation to different positions, here it appears clearly that the duration of second stage in upright position (17.32 min) with SD (5.80) was shorter than supine position (22.64 min) with SD (12.12 min), which means that the second stage of labour is significantly shorter with upright position than that with supine position (P=0.001).

Table 3 shows the effect of different positions labour on the complication of second stage, it shows that among 220 cases whose delivered in supine position, only 44 had first degree perineal tear and 2 cases show second degree perineal tear, 4 cases had third degree perineal tear; while in upright position, 38 cases had first degree perineal tear, 6 cases had second degree perineal tear, 2 cases had third degree perineal tear. Which mean that upright position had less perineal tear complication compared to supine position. P=(0.001).

Regarding fetal outcome, (as it shown in Table 4), women whose delivered in supine position only 10 of them whose

babies admitted to intensive care unit, and 24 babies need observation and 186 of babies were with mothers, while women whose delivered in upright position, only 8 of babies admitted to intensive care unit and 16 taken for observation, and 196 with mothers.

Table 1: Distribution of the duration of second stage.

Duration	Frequency	Percent
15	330	75.0
30	81.84	18.6
45	22	5.0
60	3.96	0.9
75	2.2	0.5
Total	440	100.0

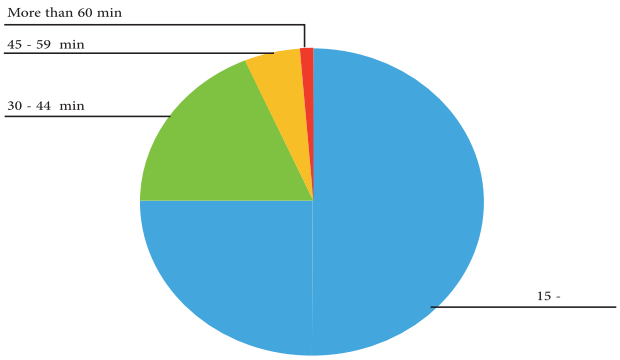

Figure 1: Duration of second stage of labour

Table 2: The mean of duration of second stage of labour in different position.

Position	Mean	Std. Deviation
Supine	22.64	12.12
Upright	17.32	5.80
Total	19.98	9.86

Table 3 : Relation between the different positions and the degrees perineal tear

Perineal tear	Supine position	Upright position	Total
Intact perineal	170	174	344
1st degree	44	38	82
2nd degree	2	6	8
3rd degree	4	2	6
Total	220	220	440

Table 4: Relation between the positions and outcome of babies

	Upright	Supine	Total
With mother	196	186	382
Observation	16	24	40
Admission	8	10	18
Total	220	220	440

DISCUSSION

A satisfying child birth experience is influenced by women self-control labour pain perception, expectation and health care support. The possibility to change the position in labour might positively influence child birth experience and also the good course and outcome of labour. Several advantage have been claimed for non-recumbent labour, thanks to gravity effect on uterine perfusion, on contraction effectiveness, and on fetal alignment to pelvic angles and diameters. In the first stage of labor Vertical position seem associated with lower pain, reduced labor length, resulting in an increased women comfort and satisfaction after delivery.[6] These evidence have been confirmed in recent meta-analysis revealing that vertical position are also associated with lower analgesia request, however, all the existing studies did not provide definitive message and were postponed to further investigation to the define the real role of position in labour process.

The different positions (upright and supine) adopted by women during the second stage of labour have been examined in numerous observation studies. The upright position has been strongly recommended for multiple reasons: one of these reasons that in upright position, gravity can assist in bringing the baby down and out, also less risk of compressing the mother aorta and thus a better oxygen supply to baby, also uterus contract more strongly and efficiently and helps the baby get in better position to pass through pelvis. Also X-ray evidence has shown that the actual dimension of the pelvic outlet become more wider in upright position.[7] However, despite of these proposed benefits of upright position, most of women favor other positions. Important finding were noticed that there was no increase in third degree perineal tears or vulval hematoma in the upright position.[8] In this study the duration of the second stage in two groups were compared and found to be shorter in upright position than supine position which was similar to other studies.[9,10] It had been found that the mean of duration of second stage in upright position was (17.32min) compared to other trial which show (48.8min)[11] and in other (15min)[12], while the mean duration of second stage in supine position in this study was (22.64min) while in other study shows (31.8min), (41min), (13min).[12] Regarding neonatal outcome, many authors postulated intrapartum persistent

occiput posterior position which normally found in range of 2- 13%, represent a risk factor for poor maternal and neonatal outcomes in means of low Apgar score, neonatal trauma,acidemic cord blood gas, admission to neonatal intensive care unit. Although our result are encouraging, it shows that the upright position associated with lesser admission of the babies to intensive care unit than supine position, but it need to be confirmed with large cohort studies.[13,14]

CONCLUSION

In the present study, the duration of the second stage of labour significantly shorter in upright position, with possibility of increased risk of second degree perineal tear.

RECOMMENDATIONS

Woman should be encouraged to give birth in the position they find must comfortable until such time as the benefits and risks of various delivery position are estimated with greater certainty, when methodologically stringent trials data are available, women should be allowed to make informed choices about the birth position in which they might wish to assume for delivery of their babies.

REFERENCES

1. Ragnat J, Altman et al., (2006) Comparison of maternal experience and duration of labour, *BJOG*. **113**, 165-70.

2. Cunningham FG, Leveno KJ, Bloom SL et al., (2005) Normal labour and delivery in William obstetrics **22**, 409441.

3. Mendez-Bauer, Newton, et al., (1986) Maternal position in labour, scientific foundation of obstetrics and Gynecology, London.

4. Eason E. et al., (1999) Randomized trial comparing the upright and supine position of second stage of labour, *BJOG*.**106**, 291-292.

5. 5. Humphrey et al., (1973) The influence of maternal exposure at birth on the fetus, *B. J. Obstet Gynecol*. **80**, 1075.

6. Gupta GK, Hofmeyr J, et al., (2012) Position in second stage of labour for women without analgesia, *CochraneData-Base Syst-Rev*. **5**, CD002006.

7. Declercq E, Sakala C, et al., (2007) Listening to mother 2, Report of second national U.S.

8. Carroli G and Mignini L (2009) Episiotomy for vaginal birth, *Cochrane-Data Base Syst-Rev*. **1**, CD000081

9. Karraz MA (2009) Ambulatory epidural anesthesia and the duration of labour, *Int. J. Obstet Gynecol*. **80**, 117-122.

10. Golara MF, Plat et al., (2012) Upright versus recumbent position in the second stage of labour in women with combined spinal-epidural-analgesia, *Int. J. Obstet Anesth*. **11**, 19-22.

11. Gardosi J, Sylvester S, et al., (2012) Alternative position in the second stage of labour, *BR. J. Obst Gynecol*. **96**, 1290-6.

12. Je Jong PR, Johnson et al., (1997) Randomized trial comparing the upright and supine position, *BJOG*. **104**, 567-71.

13. Lawrence A, Lewis GJ, Hofmeryrs et al., (2009) Maternal position and mobility during first stage of labour, *CochraneData-Base of Syst-Rev*. **15**, 2.

14. Kemp E, Kingwood GJ, Mkibuka et al., (2013) Position in the second stage of labour for women with epidural anesthesia, *Cochrane-Date-Base of Syst-Rev*. **1**, CD008070.