

# Role of Phloroglucinol in Reducing Duration of Active 1<sup>st</sup> Stage of Labour

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## ABSTRACT

**Objective:** To make a comparison between the mean duration of active 1<sup>st</sup> stage of labour with phloroglucinol versus placebo.

**Study Design:** Randomized controlled trial study

**Place and Duration of Study:** This study was conducted at the Department of Gynae and Obs., Lady Aitcheson Hospital Lahore from 1st July 2017 to 31st December 2017.

**Materials and Methods:** A total of 60 cases with singleton pregnancy, in active 1<sup>st</sup> stage of uncomplicated labour and between 18 to 40 years of age were included. Patients with multiple pregnancy, history of obstetrical, surgical and medical complications were excluded. The patients fulfilling inclusion criteria were placed randomly into two groups i.e. Group A (phloroglucinol) and Group B (placebo), by using lottery method. After this, duration of the 1<sup>st</sup> stage of labour was noted in minutes.

**Results:** The mean age of patients in group A was 27.27±5.26 years and in group B was 26.87±5.44 years. The mean gestational age in group A was 38.37±1.40 weeks and in group B was 38.57±1.38 weeks. Mean duration of 1<sup>st</sup> stage of labour in Group A was 230.20 ± 52.96 minutes while in Group B was 345.30±50.57 minutes (p-value<0.0001).

**Conclusion:** It was inferred that phloroglucinol has an important role in making duration of active 1<sup>st</sup> stage of labour short.

**Key Words:** Antispasmodic, Labour, Acceleration, First stage

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## INTRODUCTION

Labour is a process which involves contraction of myometrial muscles, effacement and dilatation of cervix and delivery of fetus and placenta in a stepwise fashion. The duration of first stage of labour in primigravida is around 12-16 hours and 6-8 hours in a multiparous female.<sup>1</sup> Prolonged labour results in adverse maternal and perinatal outcome due to maternal fatigue, excessive blood loss after delivery, infection and fetal distress and merits early detection and prompt action.<sup>2,3</sup> The labour may get prolonged due to extremes of maternal age, induced labour, rupture of membranes before labour, early admission to the labour room, epidural analgesia and high levels of maternal stress hormones.<sup>4</sup>

Uterine contractions and cervical effacement make two essential components of labour. If effective contractions are there but if the cervix remains unresponsive, the labour will take a prolonged course.<sup>3</sup>

The idea of active management of labour was to ensure that the duration of labour would not be more than 12 hours. Although the new research is coming to the point that cervical dilatation could be slower than 1 cm/hour in young nulliparous female calling for re-evaluation of the current standards.<sup>5</sup> The active management of labour is associated with lesser incidence of prolonged labour and a lower cesarean section rate.<sup>6</sup>

The diagnosis of dystocia requires a clear understanding of the fact when the progress is not within the normal range and requires intervention. Although methods to accelerate uterine contractions such as artificial rupture of membranes and oxytocics have been shown to improve cervical dilation, these methods have their own side effects.<sup>7</sup> Drugs reducing spasm are given to improve dilatation of the cervix during delivery and reduce the first stage of labour.<sup>8</sup> An ideal agent for reducing spasm and accelerating cervical dilation should have a quick and enduring action and with no risk of slowing down of uterine action. It should not have side effects for the mother and foetus.<sup>8,9</sup> Phloroglucinol and drotaverine are in common use in labour room in many hospitals, to shorten first stage of labour.<sup>3</sup> study by Tabaco et al<sup>8</sup> has shown that the mean duration of 1st stage of labour when phloroglucinol is used is 227.74±13.60 minutes as compared to 344.26±9.49 minutes in placebo group. As prolonged labour is associated with increased fetomaternal mortality and morbidity, this study will help us to determine the effect of phloroglucinol in

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reducing duration of active 1<sup>st</sup> stage of labour in our population. and if found effective, then its use could be encouraged in our routine practice to reduce the adverse consequences of prolonged labour for the mother and fetus.

## MATERIALS AND METHODS

This randomized controlled trial study was carried out at Lady Aitcheson Hospital Lahore from 1<sup>st</sup> July 2017 to 31<sup>st</sup> December 2017. Total 60 cases with singleton pregnancy, in active 1<sup>st</sup> stage of uncomplicated labour at 37-41+6 weeks of gestation, 18-40 years of age were selected. Patients with multiple pregnancy, having obstetrical and surgical complications, cardiac failure, rhythm abnormality and asthma were excluded. Informed consent was taken. All patients were then randomized in double blind fashion in two groups. Each patient was made to pick up a slip from mixed up slips (half-slips contained letter 'A' and other half contained letter 'B') and she was placed in that respective group. Group A (study group) contained 30 cases who received phloroglucinol 40mg (4ml) I/V and Group B (control group) contained 30 cases who received placebo 4ml I/V at 0 hours. Dose was repeated after 30 minutes. Neither patient nor observer knew about the injection. After this, duration of the 1<sup>st</sup> stage of labour was noted in both groups. All the data was entered and analyzed by using SPSS version 20.0. Mean and standard deviation was calculated for age, gestational age and duration of 1<sup>st</sup> stage of labour. Frequency and percentage was calculated for parity.

## RESULTS

Age range in this study was from 18 to 40 years with mean age of 27.07±5.31 years. The mean age of patients in group A was 27.27±5.26 years and in group B was 26.87±5.44 years. Majority of the patients 37 (61.67%) were between 18 to 30 years of age (Table I).

**Table No.1: Age distribution for both groups (n=60)**

Age (years)	Group A (n=30)		Group B (n=30)	
	No.	%	No.	%
18-30	18	60.0	19	63.33
31-40	12	40.0	11	36.67
Mean±SD	27.27±5.26		26.87±5.44	

**Table No.2: Distribution of patients according to parity in both groups**

Parity	Group A (n=30)		Group B (n=30)	
	No.	%	No.	%
1	9	30.0	8	26.67
2	11	36.67	11	36.67
3	6	20.0	7	23.33
4	4	13.33	4	13.33

Mean gestational age was 38.47 ± 1.38 weeks in our study. The mean gestational age in group A was

38.37±1.40 weeks and in group B was 38.57±1.38 weeks. Majority of the patients 33 (55.0%) were between >38 to 40 weeks of gestation. Distribution of patients according to parity is shown in Table 2.

## DISCUSSION

The effects of prolonged labour on fetomaternal health have been known since long. There are many risk factors which can predispose to it but are unknown in most cases.<sup>10</sup> It has been seen that administering antispasmodics during labour could lead to quicker and efficacious cervical dilatation.<sup>11</sup> We have conducted this randomized controlled study to compare the mean duration of active 1<sup>st</sup> stage of labour with phloroglucinol versus placebo.

In our study, mean duration of 1<sup>st</sup> stage of labour in phloroglucinol group was 230.20±52.96 minutes while in Group B, it was 345.30±50.57 minutes making it statistically significant. A local study also demonstrated that the mean duration of 1<sup>st</sup> stage of labour by phloroglucinol was lesser as compared to placebo group.<sup>8</sup> In another study by Rong-kai et al<sup>12</sup> the efficacy of phloroglucinol was proved.

In a study by Tahir and colleagues<sup>13</sup>, the mean duration of the first of stage labour in the control group was more as compared to the study group. In another study by Batool<sup>14</sup> reported that phloroglucinol was compared with drotaverine and it was seen that there is 46.85 minutes (24.49%) reduction in first stage of labour in phloroglucinol group. Short duration of active phase of labour confers benefits on mother and fetus.

Hao et al<sup>15</sup> in their study made a comparison between Phloroglucinol and Atropine. It was reported that the time period for full dilation of the cervix was lesser in those administered phloroglucinol. The disappearance ratio of cervical edema was quicker; the mean dilatation of cervix was more with very few side effects. Vaginal delivery rate was more. There was no statistical difference in the other parameters of fetomaternal outcome between the two groups. Another study concluded that both phloroglucinol and drotaverine are effective in enhancing the labour but duration of first stage of labour was lesser and cervical dilatation more in phloroglucinol group with no side effects. Few cesarean sections were required when phloroglucinol was used.<sup>14</sup>

Razia and colleagues<sup>16</sup> demonstrated that the mean time for the active phase in spason group was significantly shorter than that in diazepam group and Anjum et al<sup>17</sup> reported the same.

Parveen et al<sup>3</sup> in his study concluded that the standard treatment alone compared to the augmentation with Phloroglucinol combined with standard treatment, the results were superior in a way that there was reduction in the duration of labour along with no maternal or neonatal side effects. The rate of operative delivery was less and lesser amount of oxytocic agents were used.

In a recent study done in Sub-Saharan Africa it was seen that phloroglucinol had a role in shortening active stage of labour by 2 hours. In another local study similar results were obtained, thus potentiating our claim.<sup>18,19</sup>

## CONCLUSION

Phloroglucinol is effective in shortening the duration of active 1st stage of labour. So, we infer that its use could be incorporated in our routine practice for reducing duration of labour in patients having prolonged labour so that perinatal mortality and morbidity of both mother and fetus could be reduced.

### Author's Contribution:

Concept & Design of Study: Mahham Janjua

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Revisiting Critically: Mahham Janjua, Rabia Wajid

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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

1. Naqvi SB, Haroon Z. Efficacy and safety of drotaverine and phloroglucinol in first stage of labour. *Pak J Surg* 2011; 27(1):39-43.
2. Dencker A, Berg M, Bergvist L, Ladfors L, Thorsen LS, Lilja H. Early versus delayed oxytocin augmentation in nulliparous women with prolonged labour: a randomized controlled trial. *Br J Obstet Gynecol* 2009; 116:530-6.
3. Parveen T, Hussain H, Khattak NN. Effects of phloroglucinol on augmentation of labour in primigravida. *J Med Sci* 2013; 21(3):131-3.
4. Akleh HE, Al-Jufairi ZA. Effect of hyoscine-N-bulyl bromide (Buscopan) in accelerating first stage of labor. *J Bahr Med Soc* 2010;22(3):103-7.
5. Oladap OT, Diaz V, Bonet M, Abalos E, Thwin SS, Souza H, et al. Cervical dilatation patterns of low risk women in spontaneous labour and normal perinatal outcomes: a systematic review. *BJOG* 2018;125(8): 944-54.
6. Guyatt G, Oxman AD, Akl EA, Kunz R, Vist G, Brozek J, et al. GRADE guidelines: 1. Introduction: Grade evidence profiles and summary of findings tables. *J Clin Epidemiol* 2011;64: 383-94.
7. Cohen WR, Friedman EA. Assessment of Labour : a brief history. *J Perinat Med* 2018; 46: 1-8.
8. Tabassum S, Afridi B, Aman Z. Phloroglucinol for acceleration of labour: Double blind, randomized controlled trial. *J Pak Med Assoc* 2005;55:270.
9. Cromi A, Ghezzi F, Agosti M, Uccella S, Piazza N, Serati M, et al. Use of an antispasmodic (Rociverine) to shorten the length of labor: a randomized, placebo-controlled trial. *Acta Obstet Gynecol Scand* 2011;90(12):1371-8.
10. Dansereau J, Joshi AK, Helewa ME, Doran TA, Lange IR, Luther ER, et al. Double-blind comparison of carbetocin versus oxytocin in prevention of uterine atony after cesarean section. *Am J Obstet Gynecol* 1999; 180(3 Pt 1):670-6.
11. Zhang J, Trundle JF, Yancey MK. Reassessing the labor curve in nulliparous women. *Am J Obstet Gynecol* 2002; 187(4):824-8.
12. Rong-kai X, Ya C, Xiang C, Zheng-qiong C, Xu-su Z. Effects of spasfon on promoting the labor progression. *Clin Mother Child Health* 2012; C120502.
13. Tahir S, Liaqat M, Jabeen S, Rasul S. Effectiveness of Phloroglucinol to accelerate labor in primigravidas at term: double blind, randomized controlled trial. *Pak J Med Health Sci* 2015; 9(1):169-72.
14. Ahmed S, Rauf B, Shafiq A. Use of spasfon in labour. *J Himont Med* 2002;1:14-8.
15. Hao Y, Zhai GR, Duan AH. Effects of Spasfon on course of labor. *Zhonghua Fu Chan Ke Za Zhi* 2004;39(9):606-8.
16. Razia R, Begum A, Bakhtiar U, Shaheen A, Ziagham A, Saeed A. Phloroglucinol for acceleration of labour: double blind randomized controlled trial. *J Islamic Intl Med Coll* 2013;8(1):43-7.
17. Anjum N, Rehana M, Qazmi F. Efficacy of phloroglucinol versus placebo on the duration of labour in term pregnancies. *J Rawalpindi Med Coll* 2013;17(2):238-9.
18. Tchente CN, Nana TN, Tolefac PN, Abanda MH, Angong FTE, Tamambang RF, et al. Effects of Phloroglucinol on active phase of labour: A single blinded randomized trial in a tertiary care hospital in Sub Sahara Africa. *Pan Afr Med J* 2018;30:17
19. Hussain U. Effect of Phloroglucinol on active phase of first stage of labour. *J Fatima Jinnah Med Uni* 2011; 5(2):45-9.