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ORIGINAL RESEARCH

Evaluation of augmentation of delayed labour using different doses of oxytocin- A clinical study

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ABSTRACT

Background: An important contributing factor to maternal and neonatal morbidity and mortality is prolonged labor.The present study evaluated augmentation of delayed labour using different doses of oxytocin. **Materials & Methods:** 90 pregnant womenwere prescribed 33.2mgoxytocin (high) and group II 16.6mgoxytocin (low) in isotonic saline. Parameters such as indication for caesarean section, vaginal birth, NICU admission, NICU stay, mortality, metabolic acidosis, Apgar score less than 4, Apgar score less than 7was recorded. **Results:** Vaginal birth was spontaneous seen 18 in group I and 20 in group II and instrumental seen 27 in group I and 25 in group II. Indication for caesarean sectionwas fetal distress seen in 11 in group I and 14 in group II, progress failure in 29 in group I and 26 in group II. Need for manual placenta removal was seen in 5 in group I and 9 in group II. The difference was non- significant (P> 0.05).APGAR score < 7 was seen in 3 in group I and 5 in group II. NICU admission was seen in 7 in group I and 5 in group II, metabolic acidosis was seen in 5 in group I and 4 in group II. NICU stay was seen in 4.7 in group I and 5.9 in group II.Mortality was seen in 4 in group I and 2 in group II. The difference was non- significant (P> 0.05). **Conclusion:** When administered to females experiencing delayed labor, both high and low oxytocin doses produced comparable outcomes.

Key words: Women, caesarean, fetal distress

INTRODUCTION

An important contributing factor to maternal and neonatal morbidity and mortality is prolonged labor.[1] Defective uterine contractions, insufficient bony pelvis, aberrant fetal presentation, and anomalies of the mother's soft tissues are among the factors that contribute to protracted labor. One of the most common reasons for a cesarean section these days is prolonged or delayed labor. Because caesarean sections are so often performed these days, it is imperative to look into less invasive techniques in order to reduce the number of cesarean deliveries.[2] When ineffective contractions are the cause of the labor delay, labor augmentation is frequently employed. After spontaneous labor begins, it promotes the uterus to intensify, prolong, and occur more frequently during contractions. Conventional techniques for labor augmentation include amniotomy and intravenous oxytocin infusion.[3]

Lower rates of cesarean sections are associated with higher oxytocin doses. However, using large dosages of oxytocin raises safety questions. While moderate doses of oxytocin are generally safer than high ones, their effectiveness is debatable.[4]The ideal dose of oxytocin to be administered for labor augmentation is a topic of much debate. High doses of oxytocin can cause uterine hypertonicity, uterine rupture, and hypoxia in the fetus, even though they shorten the labor's duration. Low dose oxytocin appears to be safer, but it might not be effective enough to treat labor delays.[5]The present study evaluated augmentation of delayed labour using different doses of oxytocin.

MATERIALS & METHODS

This study consisted of 90 pregnant women with gestational age ranged 37 weeks - 41 weeks. All were informed regarding the study and their written consent was obtained.

Data such as name, age etc. was recorded. Patients were divided into 2 groups of 45 each. Group I were prescribed 33.2mgoxytocin (high) and group II

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16.6mgoxytocin (low) in isotonic saline. Parameters such as Indication for caesarean section, vaginal birth, NICU admission, NICU stay, mortality, metabolic acidosis, Apgar score less than 4, Apgar score less than 7was recorded. Results were recorded and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Assessment of maternal outcomes

Parameters	Variables	Group I	Group II	P value
Vaginal birth	Spontaneous	18	20	0.95
	Instrumental	27	25	
Indication for caesarean section	Fetal distress	16	19	0.84
	Progress failure	29	26	
Need for manual placenta removal		5	9	0.01

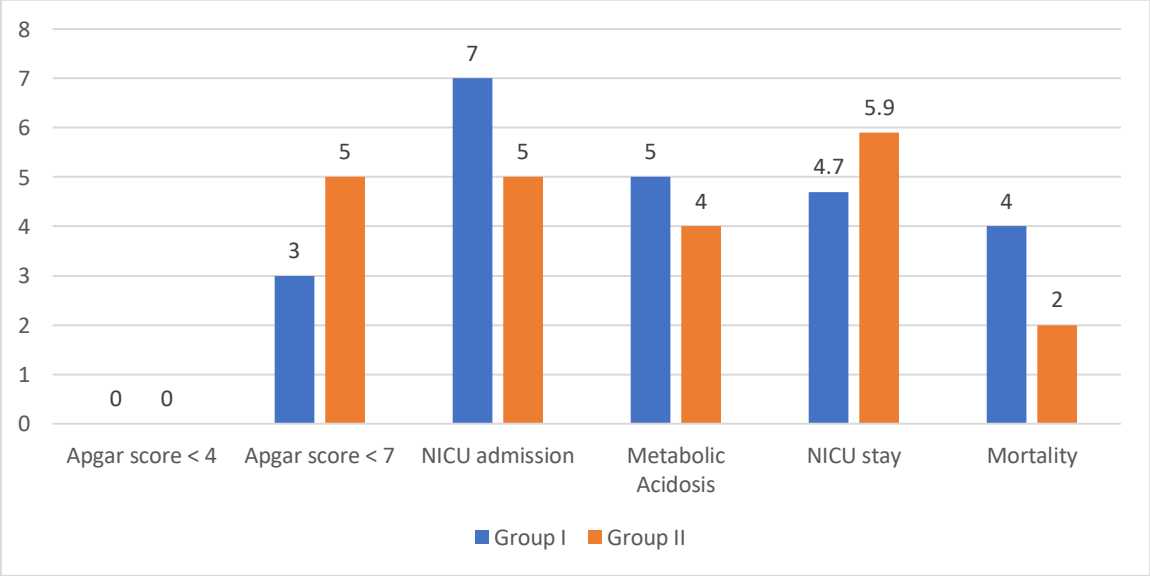
Table I shows that vaginal birth was spontaneous seen 18 in group I and 20 in group II and instrumental seen 27 in group I and 25 in group II. Indication for caesarean sectionwas fetal distress seen in 11 in group I and 14 in group II, progress failure in 29 in group I and 26 in group II. Need for manual placenta removal was seen in 5 in group I and 9 in group II. The difference was non- significant (P> 0.05).

Table II Fetal outcomes

Parameters	Group I	Group II	P value
Apgar score < 4	0	0	0
Apgar score < 7	3	5	0.05
NICU admission	7	5	0.93
Metabolic Acidosis	5	4	0.84
NICU stay	4.7	5.9	0.91
Mortality	4	2	0.82

Table II, graph I shows that APGAR score < 7 was seen in 3in group I and 5 in group II. NICU admission was seen in 7 in group I and 5 in group II, metabolic acidosis was seen in 5 in group I and 4 in group II.NICU stay was seen in 4.7 in group I and 5.9 in group II.Mortality was seen in 4 in group I and 2 in group II.The difference was non- significant (P> 0.05).

Graph I Assessment of fetal outcomes



DISCUSSION

In nulliparous women, delayed labor progress is a typical occurrence and one of the primary indicators for an emergency cesarean surgery.[6] One of the most widely used drugs in obstetric treatment and a standard procedure for inducing labor is synthetic oxytocin. But there have been doubts about oxytocin's ability to correct aberrant progress.[7] In spite of this, oxytocin use during labor has been observed to have grown over time. The medicine is typically used in an unstructured way, and this can result in hyperactive uterine contractions, which have been linked to harmful consequences on the developing foetus.[8] The primary cause of emergency caesarean section intervention is labor delay, which is most frequently observed in female nulliparous patients.[9,10]The present

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study evaluated augmentation of delayed labour using different doses of oxytocin.

We found that vaginal birth was spontaneous seen 18 in group I and 20 in group II and instrumental seen 27 in group I and 25 in group II. Indication for caesarean sectionwas fetal distress seen in 11 in group I and 14 in group II, progress failure in 29 in group I and 26 in group II. Need for manual placenta removal was seen in 5 in group I and 9 in group II. The women in Litorp et al.'s study[11] (78,931) included 28 915 (37%) who experienced oxytocin-assisted labor, and 50 016 (63%) who did not. The risks of intrapartum stillbirth and first-day mortality were not increased in women who underwent labor augmentation (aRR 1.24, 95% CI 0.65-2.4), but they were decreased in those who underwent emergency cesarean section (aRR 0.62, 95% CI 0.59-0.66), suboptimal fetal heart rate monitoring (aRR 0.50, 95% CI 0.48-0.53), and suboptimal partograph use (aRR 0.71, 95% CI 0.68-0.74), bag-and-mask ventilation (aRR 2.1, 95% CI 1.8-2.5), Apgar score <7 at five minutes (aRR 1.65, 95% CI 1.49-1.86), and neonatal death (aRR 1.93, 95% CI 1.46-2.56).

We observed that APGAR score < 7 was seen in 3 in group I and 5 in group II. NICU admission was seen in 7 in group I and 5 in group II, metabolic acidosis was seen in 5 in group I and 4 in group II. NICU stay was seen in 4.7 in group I and 5.9 in group II.Mortality was seen in 4 in group I and 2 in group II. In their study, Irrinki et al[12] performed cesarean sections on 80% (n=32) of the female participants in the low and high oxytocin groups. Failure to advance to labor in both the high oxytocin (55%, 22) and low oxytocin (62.5%, 25) groups was the primary cause of C-sections. The group with high oxytocin (742±207) experienced a shorter labor length by 24 minutes. There was no discernible difference between the two groups' fetal outcomes based on any measure that was evaluated. The low oxytocin group (5.72±5.56) received a dose that was substantially lower than that of the high oxytocin group (7.96±8.31).

In order to determine the efficacy and safety of oxytocin infusion in inducing labor in nulliparous women, Majoko et al[13]examined high and low beginning doses. 133 participants were randomized to start at a low oxytocin dosage, and 125 to a high one. In terms of gestational age and mother age, the groups were similar. The two groups' mean cervical dilation prior to labor augmentation was six cm, and there was no difference in that measurement. In the high dose group, the mean augmentation to delivery interval was 218 minutes as opposed to 326 minutes. The fetal outcome in terms of birthweight, five-minute Apgar score, admission to the neonatal unit, and perinatal death did not change according to the manner of delivery.

CONCLUSION

Authors found that

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