

THE STUDY OF COMPARISON OF NIFEDIPINE AND NITROGLYCERINE USE IN  
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## ABSTRACT

**Objective:** The purpose of this analysis is to distinguish between the results of Nitroglycerin and Nifedipine, thus postponing the delivery time. **Place and Duration:** The study was conducted at the Department of Obstetrics and Gynaecology, DHQ Teaching Hospital, Sargodha, from 1st May 2019 until 1 April 2020. **Materials and Methods:** The observations included a total of 200 prematurely administered women and divided them between two groups by the lottery method. Group A. Nifedipine and nitroglycerine administered to women were observed until the day of delivery and complications after childbirth were duly observed in the pre-designed Performa. Informed consent was obtained by the participants. To select cases, purposeful non-probability sampling was used. The entry and analysis of SPSS data was conducted (version 10). **Results:** The average extended pregnancy for Group A was 41.23 hours  $\pm$  25.11SD. Of the 100 patients in Group A, 58 (58%) had two days of pregnancy, followed by 23 (23%) patients with one day of extension. Pregnancy prolongation in Group B was observed at 54 (54 percent) days, followed by 17 (17 percent) in patients with 1-day pregnancy prolongation. 19 (19%) women were pregnant for more than two days in Group A and 29 (19%) women were pregnant for more than two days in Group B (29 per cent). The difference in pregnancy length was insignificant in both groups, and p was 0.653. A greater rate of complications was shown in Group B. Group A showed a post-therapy headache of 21 percent. 32 percent of patients accounted for group B. Group A patients were admitted to NICU at 18%, while Group B patients were admitted to NICU at 35%. **Conclusion:** Nifedipine is useful in the treatment of premature delivery.

**KEYWORDS:** Nitroglycerine, preterm delivery, Nifedipine.

## INTRODUCTION

Preterm work is an essential pregnancy issue and threatens the baby's health and life. Premature birth rates are around 5-18% in 184 countries (Chang et al. 2013). Fifteen million births are recorded annually. Early labor affects 9% of births in high-income countries, while medium- and low-income countries account for 13% (Simhan & Caritis, 2007). It usually takes place between 20th and 37th week of pregnancy and occurs before a sweeping gesture due to uterine contractions that lead to gulf dilation. However, we received mixed results, although several medicines were introduced to prevent premature work (Flenady et al. 2014). Magnesium sulfate (MgSO<sub>4</sub>), nifedipine, and indomethacin are drugs used to prevent premature labor. Nifedipine is safer in preliminary work (Kashanian, Zamen & Sheikhsari 2014). Nifedipine was preventive in intraventricular haemorrhage, RDS, Enterocolitis necrotizing (King et al. 2003). This study aims to compare women's efficacy of nitroglycerin and nifedipine induction in prolonging their obesity. This is the first local research published on this

topic. This study can determine the role of nifedipine and nitroglycerin in prolonging pregnancy.

## MATERIALS AND METHODS

The study was conducted at Sargodha's Department of Obstetrics and Gynaecology, DHQ Teaching Hospital, from 1 May 2019 to 1 April 2020. The sample is 200 (100 per Group). Consecutive (not likelihood) sampling technique. It was a randomized trial study. The study included two hundred pregnant women aged 20-40 with >1 cm cervical dilation and >50 percent erasure. Demographic details, gestational age, contact and informed consent were considered—females with broken membrane and fetal termination indication. Lottery method classified two groups. Group A patients received Nifedipine 29mg. Repeat after another 1 hour if necessary. Continuation of 20 mg after 6 hours, lasting 48 hours. Group B received a nitroglycerin abdominal patch (10mg). Additional patching will be applied unless the contractions stop for another hour. The new patch was used after 24 hours and only removed after the contractions had stopped. NICU and maternal headaches

were observed after birth; each patient was followed. SPSS v.10 recorded and analyzed data. Frequencies and percentages for categorical variables. Mean  $\pm$  SD was estimated for numerical variables like gestation, age parity, and gravitational age. To compare pregnancy lengths and complications in each group, Chi-square tests were performed. A P-value below 0.05 was considered. Chi-square post-stratification test was implemented.

## RESULTS

Group A extended pregnancy average was 41.23 hours  $\pm$  25.11SD. In Group A, 58 (58%) of 100 patients had two days of pregnancy extension, followed by 23 (23%) with one day pregnancy extension. Group B pregnancy prolongation was observed in 54 (54%) days, followed by 17 (17%) in patients with 1-day pregnancy prolongation. In Group A, 19 (19%) females had an extension of more than two days, and in Group B pregnancy was extended in 29 (29%) patients over two days. In both groups, the pregnancy length difference was insignificant, and *p* was 0.653. Group B complications were higher. Group A showed 21% post-treatment headache. Group B represented 32% of patients. Group A patients were admitted to NICU 18%, while Group B patients were admitted 35%.

## DISCUSSION

Premature birth is a major cause of perinatal mortality and morbidity, causing 70% perinatal death. It is common in low-and middle-income countries. Premature birth ranges from 7.4-13.3 percent and 8 percent in high-income countries. Chronic lung disease, cerebral paralysis, respiratory distress syndrome, and intraventricular haemorrhage cause premature birth. Tocolytic drugs are controversial. Conde-Agudelo *et al.* (2011) agree that as a first-line tooling therapy, calcium channel blocker such as Nifedipine can be used. A Cochrane review of Calcium Channel Blockers (CCBs) for premature labor acute tocolysis shows that premature delivery risks before 34 weeks are reduced with improved neonatal outcomes within seven days of nifedipine therapy. The comparison between Amorim *et al.*, Nitroglycerin and Nifedipine (2009) showed that the premature labor rate within 48 hours was 15.4 percent and 12.5 percent respectively. Dhawle *et al.* (2013) survey found that 88.4% of the Nifedipine arm was higher after 48 hours of work compared to 68.3% of Nitroglycerin. Nifedipine helped 72.1% for seven days with prolonged pregnancy, and 62.8% for 14 days. This is no different from NTG, which took 65.9% seven days for pregnancy and 58.6% for 14 days. In Nifedipine, child delivery was delayed by two days at 76.6% and in NTG by 75.3%, which was not significantly different. For this study, prolonged NTG group pregnancy was 36.93 hours  $\pm$  23.64 in the Nifedipine Arm versus 40.09 hours  $\pm$  26.26. It is the same as that of Papatsonis *et al.* (1997) 39.2% in Nifedipine Arm, compared to 22.1% in

Ritodrine Arm & Lees *et al.* (1999) 35.8% in NTG, compared to 36.9% in Ritodrine.

## CONCLUSION

We concluded that oral Nifedipine effectively delayed pregnancy for 48 hours compared to transdermal NTG. Tocolysis failed with NTG patch application. Nitroglycerin has a higher headache complication rate and neonatal ICU admission than Nifedipine.

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