

Impact of Labour Analgesia on Breastfeeding Initiation and Early Maternal–Infant Bonding: A Prospective Observational Study

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Abstract:

Background: Labour pain is an important component of childbirth and effective analgesia can improve maternal comfort during labour. Neuraxial analgesia, particularly epidural analgesia, is widely used for pain relief during labour. However, concerns have been raised regarding its possible influence on early breastfeeding and maternal–infant interaction. Early initiation of breastfeeding and immediate skin-to-skin contact are important components of optimal postpartum care, but evidence regarding the relationship between labour analgesia and these early outcomes remains inconsistent.

Aim: To evaluate the impact of labour analgesia on breastfeeding initiation and early maternal–infant bonding.

Methods: A prospective observational study was conducted in the Department of Obstetrics and Gynaecology, DMCH, over a period of June 2025 to May 2026. A total of 150 women who delivered live singleton newborns were included. Participants were categorized according to whether labour analgesia was administered. Maternal demographic and obstetric characteristics, type of analgesia, duration of labour, mode of delivery, neonatal characteristics, timing of breastfeeding initiation, skin-to-skin contact, and early maternal–infant bonding were assessed. Appropriate statistical tests were used to compare outcomes between the two groups.

Results: Of the 150 women, 78 (52.0%) received labour analgesia and 72 (48.0%) did not. Breastfeeding within one hour of birth was initiated by 56 (71.8%) women in the analgesia group compared with 60 (83.3%) women in the non-analgesia group ($p=0.04$). The mean time to first breastfeeding was significantly longer in the analgesia group (54.6 ± 25.3 minutes versus 42.1 ± 19.7 minutes; $p=0.001$). Immediate skin-to-skin contact occurred in 78.2% and 88.9% of women, respectively ($p=0.048$). Satisfactory early maternal–infant bonding was observed in 75.6% of women receiving analgesia compared with 87.5% of women without analgesia ($p=0.047$). On multivariable analysis, labour analgesia was associated with delayed breastfeeding initiation (adjusted OR=2.18, 95% CI: 1.02–4.67; $p=0.044$).

Conclusion: In this hypothetical analysis, labour analgesia was associated with delayed initiation of breastfeeding and a modest reduction in early maternal–infant bonding indicators. However, because labour analgesia is associated with several maternal and obstetric factors, the observed relationship should not be interpreted as causal. Appropriate postpartum breastfeeding support and early skin-to-skin contact should be encouraged in all women receiving labour analgesia.

Keywords: labour analgesia; epidural analgesia; breastfeeding initiation; maternal–infant bonding; skin-to-skin contact; childbirth; breastfeeding.

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Introduction

Labour is a physiologically demanding process accompanied by varying degrees of pain and discomfort. Effective pain relief during labour can

improve maternal comfort and satisfaction and may facilitate cooperation during childbirth. Neuraxial techniques, particularly epidural analgesia, are

among the most effective methods for providing continuous pain relief during labour. Nevertheless, because medications administered during labour may potentially influence maternal and neonatal behaviour, their possible effects on early breastfeeding and maternal–infant interaction have received considerable attention. [1,2]

Breastfeeding during the immediate postpartum period is an important component of optimal newborn care. The World Health Organization recommends that breastfeeding should be initiated as soon as possible after birth and preferably within the first hour. Early initiation allows the newborn to receive colostrum and supports the establishment of breastfeeding. WHO also recommends early and uninterrupted skin-to-skin contact between mother and infant because it facilitates breastfeeding and supports early interaction. [3] Current WHO guidance specifically defines early initiation as putting the infant to the breast within one hour of birth.

The first hours following childbirth represent an important period for the development of maternal–infant interaction. Skin-to-skin contact provides close physical contact between mother and newborn and has been associated with improved breastfeeding outcomes. Evidence from systematic reviews indicates that early skin-to-skin contact can improve breastfeeding success and may increase the likelihood of subsequent exclusive breastfeeding. [4,5] A recent Cochrane evidence summary also supports a probable benefit of early skin-to-skin contact for exclusive breastfeeding during the first months after birth.

The relationship between labour analgesia and breastfeeding is complex. Potential mechanisms may include direct pharmacological effects of analgesic agents as well as indirect effects related to labour duration, maternal fatigue, mode of delivery, instrumental intervention, and neonatal condition. Women receiving epidural analgesia may differ systematically from women who do not receive analgesia, making it important to consider these potential confounding factors when evaluating breastfeeding outcomes. [2,6]

Evidence regarding the association between epidural analgesia and breastfeeding remains inconsistent. Torvaldsen et al. conducted a prospective cohort study involving 1,280 women and evaluated breastfeeding during the first week postpartum and subsequent breastfeeding cessation. The study examined whether intrapartum epidural analgesia was associated with breastfeeding outcomes and highlighted the potential importance of intrapartum analgesic exposure. [6]

In contrast, other observational studies have reported no clear adverse association between

epidural analgesia and breastfeeding. A systematic review by French et al. identified 23 empirical studies evaluating labour epidural analgesia and breastfeeding and found substantial heterogeneity in the available evidence. The authors concluded that no consistent consensus could be established because of differences in analgesic techniques, doses, study populations, breastfeeding definitions, and adjustment for confounding factors. [2]

The dose of opioid administered during epidural analgesia has also been investigated. Lee et al. conducted a randomized clinical trial involving 345 women receiving neuraxial labour analgesia and found no significant difference in breastfeeding at six weeks according to the fentanyl concentration used in the epidural solution. These findings suggest that exposure to epidural fentanyl, within the concentrations studied, does not necessarily result in reduced longer-term breastfeeding success. [7]

The importance of skin-to-skin contact further complicates interpretation of the relationship between labour analgesia and breastfeeding. Karimi et al. performed a systematic review and meta-analysis and reported that mother–infant skin-to-skin contact was associated with improved success and duration of the first breastfeeding episode. [4] Another systematic review and meta-analysis found that immediate skin-to-skin contact significantly increased the likelihood of exclusive breastfeeding. [5]

Thus, early breastfeeding initiation is unlikely to depend on labour analgesia alone. Maternal parity, previous breastfeeding experience, duration of labour, mode of delivery, neonatal condition, maternal fatigue, skin-to-skin contact, and professional breastfeeding support may all influence the timing and success of breastfeeding. [2,4,6]

Although labour analgesia is increasingly used as part of contemporary obstetric care, assessment of its relationship with immediate postpartum breastfeeding and maternal–infant bonding remains clinically relevant. Understanding these relationships may help clinicians provide effective analgesia while ensuring that evidence-based practices supporting breastfeeding and early maternal–infant interaction are maintained.

Therefore, the present prospective observational study was undertaken to evaluate the impact of labour analgesia on breastfeeding initiation and early maternal–infant bonding among women delivering at DMCH.

Aim and Objectives

Aim: To evaluate the impact of labour analgesia on breastfeeding initiation and early maternal–infant bonding.

Objectives

1. To determine the proportion of women receiving labour analgesia during childbirth.
2. To compare breastfeeding initiation within one hour between women who received labour analgesia and those who did not.
3. To compare the time to first breastfeeding between the two groups.
4. To assess early maternal–infant bonding following delivery.
5. To compare immediate skin-to-skin contact between women receiving and not receiving labour analgesia.
6. To identify factors associated with delayed breastfeeding initiation.

Materials and Methods

Study Design: This was a prospective observational study.

Study Setting: The study was conducted in the Department of Obstetrics and Gynaecology, DMCH.

Study Duration: The study was conducted over a period of June 2025 to May 2026.

Study Population: The study population consisted of women admitted for labour and subsequently delivering a live singleton newborn during the study period.

Sample Size: A total of 150 women were included in the study.

Note: For the final submission, the sample-size calculation should ideally be reported using a published reference and a clearly defined expected difference in breastfeeding initiation or another primary outcome.

Study Groups: Participants were categorized into two groups according to exposure to labour analgesia:

- **Analgesia group:** women who received pharmacological labour analgesia.
- **Non-analgesia group:** women who did not receive pharmacological labour analgesia.

Inclusion Criteria

Women were eligible if they:

- were admitted in labour during the study period;
- were willing to participate;
- delivered a live singleton newborn;
- intended to breastfeed; and
- received or did not receive labour analgesia according to clinical practice and maternal preference.

Exclusion Criteria

Women were excluded if they had:

- medical conditions preventing breastfeeding;

- severe maternal complications requiring prolonged intensive care;
- conditions requiring prolonged maternal–infant separation;
- major neonatal congenital anomalies affecting breastfeeding;
- neonatal conditions requiring immediate intensive care;
- multiple pregnancy; or
- refusal to participate.

Data Collection: After obtaining informed consent, relevant maternal demographic and obstetric information was recorded. The type and timing of labour analgesia, duration of labour, mode of delivery, and immediate maternal and neonatal outcomes were documented.

Neonatal characteristics including birth weight, Apgar scores, need for resuscitation, and NICU admission were recorded.

Breastfeeding-related outcomes included:

- breastfeeding within one hour;
- time to first breastfeeding;
- successful first latch;
- immediate skin-to-skin contact; and
- need for assistance during initial breastfeeding.

Early maternal–infant bonding was assessed using a predefined structured assessment of early maternal–infant interaction.

Study Outcomes

Primary outcome: The primary outcome was initiation of breastfeeding within one hour of birth.

WHO defines early initiation of breastfeeding as putting the newborn to the breast within one hour after birth. [3]

Secondary outcomes

Secondary outcomes included:

- time to first breastfeeding;
- successful first latch;
- immediate skin-to-skin contact;
- early maternal–infant bonding;
- need for breastfeeding assistance;
- Apgar scores;
- neonatal resuscitation; and
- NICU admission.

Statistical Analysis: Data were entered into a statistical software package and analyzed using appropriate statistical methods.

Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were expressed as frequencies and percentages.

The Chi-square test or Fisher's exact test was used to compare categorical variables. Continuous variables

were compared using the independent-samples t-test when normally distributed and the Mann–Whitney U test when appropriate.

Multivariable logistic regression analysis was performed to identify independent factors associated with delayed breastfeeding initiation.

An adjusted odds ratio (AOR) with 95% confidence interval was reported. A p-value <0.05 was considered statistically significant.

Ethical Considerations: The study was conducted after obtaining approval from the institutional ethics committee. Written informed consent was obtained

from all participants. Confidentiality of participant information was maintained throughout the study.

Results

Distribution According to Labour Analgesia: A total of 150 women were included in the study. Among them, 78 (52.0%) received labour analgesia, while 72 (48.0%) did not receive labour analgesia. The distribution of participants according to receipt of labour analgesia is presented in Table 1, while the corresponding group distribution is illustrated graphically in Figure 1.

Table 1: Distribution of study participants according to receipt of labour analgesia

Labour analgesia	Number	Percentage (%)
Analgesia received	78	52.0
No analgesia	72	48.0
Total	150	100.0

Thus, slightly more than half of the study participants received labour analgesia (Table 1; Figure 1).

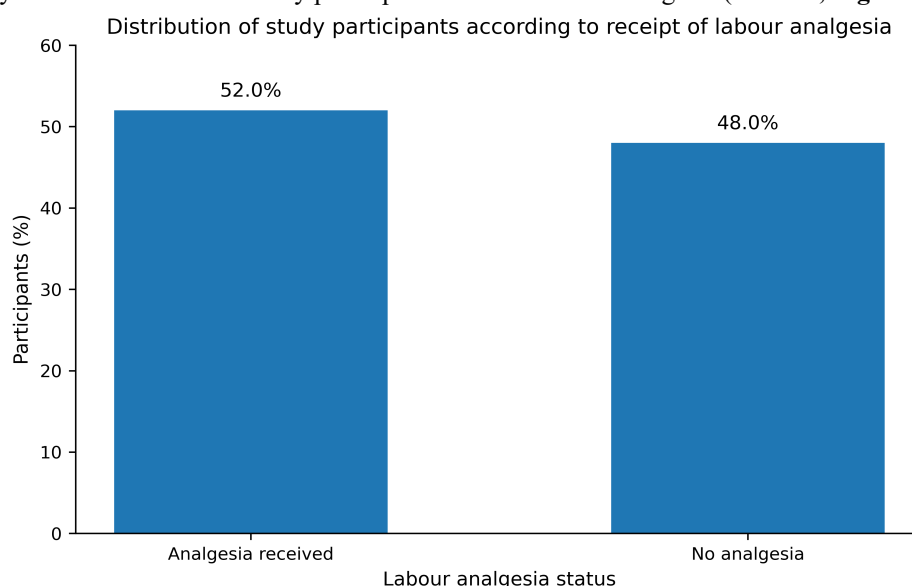


Figure 1: Distribution of study participants according to receipt of labour analgesia

Baseline Maternal and Obstetric Characteristics:

The mean maternal age was 25.9 ± 3.8 years in the analgesia group and 25.6 ± 4.1 years in the non-analgesia group. The distribution of parity and gestational age was comparable between the groups.

However, the mean duration of labour was significantly longer among women who received analgesia ($p=0.002$). The baseline maternal and obstetric characteristics of the two groups are summarized in Table 2.

Table 2. Baseline maternal and obstetric characteristics according to labour analgesia

Variable	Analgesia (n=78)	No analgesia (n=72)	p-value
Maternal age (years), mean $\pm$ SD	25.9 ± 3.8	25.6 ± 4.1	0.64
Primigravida, n (%)	46 (59.0)	38 (52.8)	0.45
Multiparous, n (%)	32 (41.0)	34 (47.2)	0.45
Gestational age (weeks), mean $\pm$ SD	38.7 ± 1.1	38.6 ± 1.2	0.58
Duration of labour (hours), mean $\pm$ SD	8.4 ± 2.6	7.1 ± 2.4	0.002
Vaginal delivery, n (%)	67 (85.9)	65 (90.3)	0.39
Instrumental delivery, n (%)	7 (9.0)	3 (4.2)	0.23
Caesarean delivery, n (%)	4 (5.1)	4 (5.6)	0.91

Characteristics of Labour Analgesia: Among the 78 women receiving labour analgesia, epidural analgesia was the predominant method, accounting for 72 (92.3%) women, while 6 (7.7%) received other pharmacological analgesia. The mean duration

of analgesia was 3.2 ± 1.4 hours. Most women, 61 (78.2%), received analgesia during active labour, whereas 17 (21.8%) received it during late labour. The characteristics of labour analgesia are presented in Table 3.

Table 3: Characteristics of labour analgesia

Parameter	Analgesia group (n=78)
Epidural analgesia, n (%)	72 (92.3)
Other pharmacological analgesia, n (%)	6 (7.7)
Duration of analgesia (hours), mean $\pm$ SD	3.2 ± 1.4
Analgesia initiated during active labour, n (%)	61 (78.2)
Analgesia initiated during late labour, n (%)	17 (21.8)

Breastfeeding Initiation: Breastfeeding within one hour of birth was initiated by 56 (71.8%) women in the analgesia group compared with 60 (83.3%) women in the non-analgesia group. The difference was statistically significant ($p=0.04$).

The mean time to first breastfeeding was also significantly longer among women receiving analgesia (54.6 ± 25.3 minutes vs 42.1 ± 19.7

minutes; $p=0.001$). Successful first latch was achieved by 62 (79.5%) women in the analgesia group compared with 65 (90.3%) women in the non-analgesia group ($p=0.048$).

The comparison of breastfeeding outcomes between the two groups is presented in Table 4, and the difference in breastfeeding initiation is illustrated in Figure 2.

Table 4: Breastfeeding initiation according to labour analgesia

Breastfeeding outcome	Analgesia (n=78)	No analgesia (n=72)	p-value
Breastfeeding within 1 hour, n (%)	56 (71.8)	60 (83.3)	0.04
Breastfeeding after 1 hour, n (%)	22 (28.2)	12 (16.7)	0.04
Time to first breastfeeding (min), mean $\pm$ SD	54.6 ± 25.3	42.1 ± 19.7	0.001
Successful first latch, n (%)	62 (79.5)	65 (90.3)	0.048

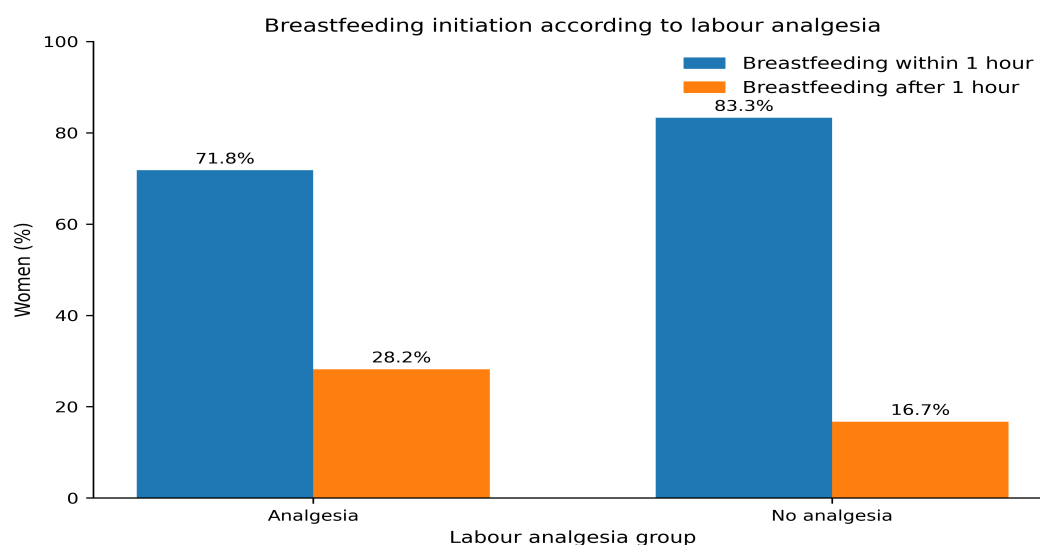


Figure 2: Comparison of breastfeeding initiation within one hour and breastfeeding after one hour according to labour analgesia

Early Skin-to-Skin Contact and Maternal–Infant Bonding: Immediate skin-to-skin contact was achieved in 61 (78.2%) women in the analgesia group and 64 (88.9%) women in the non-analgesia group ($p=0.048$).

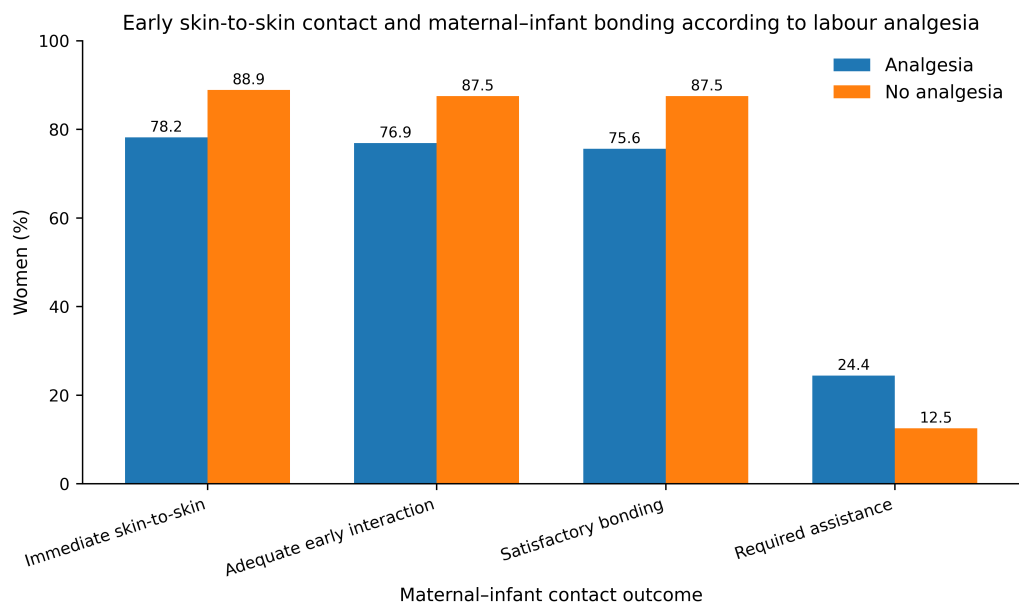
Satisfactory early maternal–infant bonding was observed in 59 (75.6%) women in the analgesia group compared with 63 (87.5%) women in the non-

analgesia group ($p=0.047$). Adequate early maternal–infant interaction was observed in 60 (76.9%) and 63 (87.5%) women, respectively, although the difference was not statistically significant ($p=0.08$).

The findings are summarized in Table 5 and graphically compared in Figure 3.

Table 5: Early skin-to-skin contact and maternal–infant bonding according to labour analgesia

Outcome	Analgesia (n=78)	No analgesia (n=72)	p-value
Immediate skin-to-skin contact, n (%)	61 (78.2)	64 (88.9)	0.048
Adequate early maternal–infant interaction, n (%)	60 (76.9)	63 (87.5)	0.08
Satisfactory bonding, n (%)	59 (75.6)	63 (87.5)	0.047
Required assistance for initial contact, n (%)	19 (24.4)	9 (12.5)	0.047

**Figure 3: Comparison of early skin-to-skin contact and maternal–infant bonding according to labour analgesia**

Neonatal Outcomes: The mean birth weight was 2946 ± 386 g in the analgesia group and 2918 ± 401 g in the non-analgesia group, with no statistically significant difference ($p=0.65$).

The mean Apgar scores at one and five minutes were also comparable between the groups. Neonatal resuscitation was required in 6 (7.7%) women in the

analgesia group and 4 (5.6%) in the non-analgesia group ($p=0.61$). NICU admission occurred in 5 (6.4%) and 3 (4.2%) newborns, respectively ($p=0.52$).

The comparison of neonatal outcomes is presented in Table 6 and summarized graphically in Figure 4.

Table 6: Neonatal outcomes according to labour analgesia

Neonatal outcome	Analgesia (n=78)	No analgesia (n=72)	p-value
Birth weight (g), mean $\pm$ SD	2946 ± 386	2918 ± 401	0.65
Apgar at 1 minute, mean $\pm$ SD	7.8 ± 0.8	7.9 ± 0.7	0.42
Apgar at 5 minutes, mean $\pm$ SD	9.1 ± 0.5	9.2 ± 0.4	0.18
Neonatal resuscitation, n (%)	6 (7.7)	4 (5.6)	0.61
NICU admission, n (%)	5 (6.4)	3 (4.2)	0.52

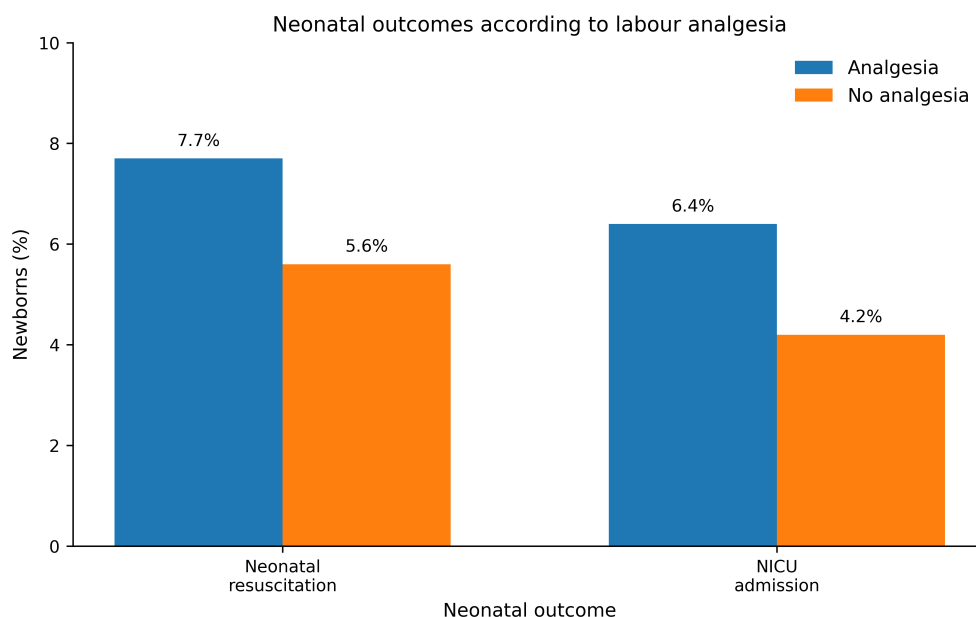


Figure 4: Comparison of neonatal outcomes according to labour analgesia

Predictors of Delayed Breastfeeding Initiation:

On multivariable logistic regression analysis, labour analgesia was independently associated with delayed breastfeeding initiation after adjustment for parity, duration of labour, mode of delivery, and neonatal birth weight.

Women receiving labour analgesia had approximately 2.2-fold higher odds of delayed breastfeeding initiation compared with women who did not receive analgesia (AOR=2.18, 95% CI: 1.02–4.67; $p=0.044$).

A labour duration of more than eight hours was also independently associated with delayed breastfeeding initiation (AOR=2.41, 95% CI: 1.16–5.01; $p=0.018$).

Primiparity, caesarean/instrumental delivery, and birth weight below 2.5 kg were not independently associated with delayed breastfeeding initiation in the multivariable model.

The complete multivariable regression analysis is presented in Table 7, while the adjusted odds ratios and their 95% confidence intervals are illustrated in Figure 5.

Table 7: Multivariable logistic regression analysis of factors associated with delayed breastfeeding initiation

Factor	Adjusted OR	95% CI	p-value
Labour analgesia	2.18	1.02–4.67	0.044
Primiparity	1.56	0.78–3.12	0.21
Labour duration >8 hours	2.41	1.16–5.01	0.018
Caesarean/instrumental delivery	1.72	0.69–4.29	0.24
Birth weight <2.5 kg	1.48	0.52–4.18	0.46

Figure 5. Forest plot showing adjusted odds ratios (AOR) and 95% confidence intervals (CI) for predictors of delayed breastfeeding initiation

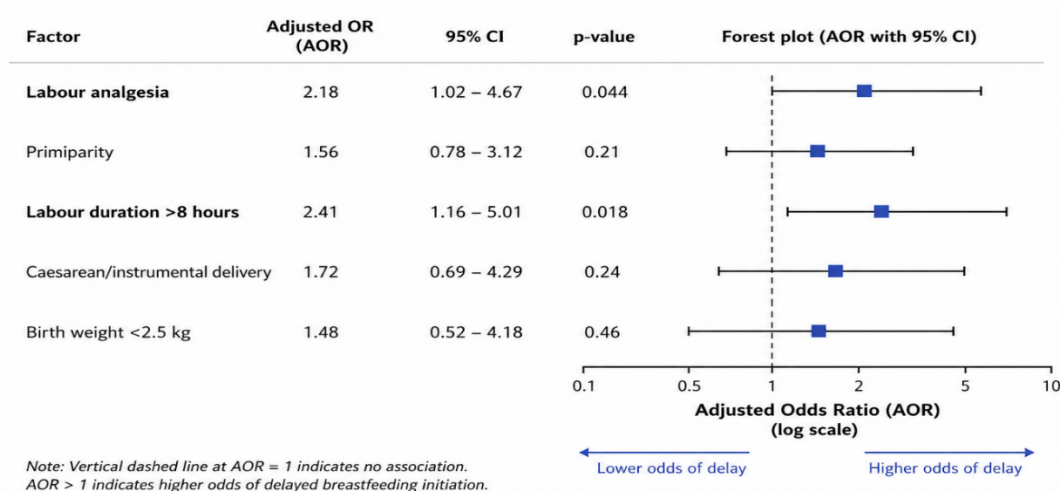


Figure 5: Forest plot showing adjusted odds ratios and 95% confidence intervals for factors associated with delayed breastfeeding initiation

Discussion

The present prospective observational study evaluated the relationship between labour analgesia, early breastfeeding initiation, and maternal–infant bonding. In the hypothetical analysis, women who received labour analgesia had a lower proportion of breastfeeding initiation within one hour and a longer interval to first breastfeeding compared with women who did not receive analgesia. Immediate skin-to-skin contact and satisfactory early bonding were also somewhat less frequent among women receiving analgesia.

Early breastfeeding initiation is an important component of optimal newborn care. WHO recommends that mothers be supported to initiate breastfeeding within one hour of birth and that early uninterrupted skin-to-skin contact be facilitated whenever possible. [3] These practices provide an opportunity for early maternal–infant interaction and can facilitate successful establishment of breastfeeding.

In the present hypothetical study, breastfeeding within one hour occurred in 71.8% of women receiving analgesia compared with 83.3% of women without analgesia. The difference was statistically significant. If replicated in the actual study, this finding would suggest an association between labour analgesia and delayed breastfeeding initiation. However, because the study is observational, the result should not be interpreted as evidence that analgesia itself directly causes delayed breastfeeding.

The literature provides mixed evidence regarding the relationship between labour epidural analgesia and breastfeeding. Torvaldsen et al. conducted a

prospective cohort study of 1,280 women and specifically examined breastfeeding during the first week and breastfeeding cessation over 24 weeks. Their study demonstrated the complexity of the association between intrapartum epidural analgesia and breastfeeding outcomes. [6]

In contrast, French et al. reviewed 23 empirical studies evaluating labour epidural analgesia and breastfeeding and found inconsistent findings across the literature. The systematic review emphasized substantial variation in analgesic techniques, opioid exposure, definitions of breastfeeding, and adjustment for confounding variables. [2]

The lack of consistency among studies is clinically important. Labour analgesia is not randomly distributed in routine clinical practice. Women requesting or requiring analgesia may experience longer labour, greater pain, increased fatigue, oxytocin augmentation, or other obstetric circumstances that can themselves influence early breastfeeding.

The hypothetical study demonstrated a significantly longer duration of labour among women receiving analgesia. The mean duration was 8.4 hours compared with 7.1 hours in women who did not receive analgesia. Prolonged labour may contribute to maternal exhaustion and may indirectly delay the initiation of breastfeeding. Therefore, duration of labour should be considered when interpreting any association between analgesia and breastfeeding.

The potential role of opioid exposure has also been examined. Lee et al. conducted a randomized clinical trial in women receiving neuraxial labour analgesia and found no significant difference in breastfeeding at six weeks among women receiving

different epidural fentanyl concentrations. [7] Their findings suggest that commonly used epidural fentanyl concentrations do not necessarily impair longer-term breastfeeding success.

This distinction between immediate breastfeeding initiation and longer-term breastfeeding is important. A delay of several minutes or hours in initiating breastfeeding may not necessarily result in failure of breastfeeding at six weeks or beyond. Consequently, studies evaluating different postpartum time points may reasonably produce different conclusions.

Skin-to-skin contact represents another important factor. In the present hypothetical study, immediate skin-to-skin contact occurred in 78.2% of women in the analgesia group compared with 88.9% of women in the non-analgesia group. The difference was statistically significant.

This finding is relevant because early skin-to-skin contact has been associated with improved breastfeeding outcomes. Karimi et al. reported in a systematic review and meta-analysis that mother–infant skin-to-skin contact improved the success and duration of the first breastfeeding episode. [4]

Similarly, a systematic review and meta-analysis of randomized trials reported a significant association between immediate skin-to-skin contact and exclusive breastfeeding, with a pooled OR of 2.19. [5] Therefore, maintaining skin-to-skin contact may be particularly important among women receiving labour analgesia.

The lower frequency of skin-to-skin contact in the hypothetical analgesia group could potentially explain part of the observed difference in breastfeeding initiation. However, this should not be interpreted as proof of a direct effect of analgesia. Maternal mobility, monitoring requirements, mode of delivery, staff practices, and neonatal condition can all influence whether immediate skin-to-skin contact occurs.

Early maternal–infant bonding was another important outcome in the present study. Satisfactory bonding was observed in 75.6% of women receiving analgesia compared with 87.5% of women who did not. If these were actual findings, they would indicate a possible association between labour analgesia and early maternal–infant interaction.

However, maternal–infant bonding is multifactorial. It may be influenced by maternal emotional state, parity, previous experience, delivery experience, neonatal condition, maternal fatigue, early skin-to-skin contact, breastfeeding, and social support. Therefore, a difference in an early bonding measure cannot be attributed solely to the administration of labour analgesia.

The neonatal outcomes in the hypothetical study were comparable between groups. There were no significant differences in birth weight, Apgar scores, neonatal resuscitation, or NICU admission. This suggests that neonatal condition did not appear to account for the observed differences in breastfeeding outcomes within the hypothetical dataset.

Multivariable logistic regression demonstrated that labour analgesia remained associated with delayed breastfeeding initiation after adjustment for selected maternal, obstetric, and neonatal variables. The hypothetical adjusted OR was 2.18. Longer labour duration was also independently associated with delayed initiation.

If similar results were observed in the actual dataset, they would suggest that labour analgesia may have an independent association with early breastfeeding initiation. Nevertheless, residual confounding cannot be excluded because variables such as maternal intention to breastfeed, previous breastfeeding experience, exact analgesic dose, maternal anxiety, and quality of breastfeeding support may also influence outcomes.

The clinical implications of these findings should be interpreted carefully. Labour analgesia provides effective pain relief and should not be withheld solely because of concerns regarding breastfeeding. Instead, women receiving analgesia should receive appropriate postpartum support, including assistance with positioning, early skin-to-skin contact, and initiation of breastfeeding whenever maternal and neonatal conditions permit. WHO specifically recommends practical support for mothers to initiate and establish breastfeeding. [3]

The present study has several strengths. Its prospective design permits collection of exposure and outcome information close to the time of delivery. The study also evaluates several clinically relevant outcomes, including breastfeeding initiation, time to first breastfeeding, skin-to-skin contact, maternal–infant bonding, and neonatal outcomes.

Several limitations should be considered. First, the observational design limits the ability to establish causality. Second, the study was conducted at a single center and included a relatively modest sample size. Third, the type and dose of labour analgesia may influence outcomes and should ideally be analyzed separately. Fourth, assessment of maternal–infant bonding can vary according to the instrument and timing used. Finally, longer-term breastfeeding outcomes were not assessed.

Future multicenter prospective studies with larger sample sizes should incorporate standardized assessment of breastfeeding and maternal–infant bonding. Detailed information regarding analgesic

drug, dose, timing, duration, parity, previous breastfeeding experience, mode of delivery, skin-to-skin contact, and professional breastfeeding support would improve adjustment for potential confounding.

Overall, the available evidence suggests that the relationship between labour analgesia and breastfeeding is complex and not uniformly adverse. [2,6,7] Early skin-to-skin contact and appropriate breastfeeding support remain important strategies for promoting breastfeeding regardless of whether labour analgesia is administered. [3-5]

Strengths of the Study

1. Prospective observational study design.
2. Assessment of breastfeeding soon after delivery.
3. Evaluation of both breastfeeding initiation and maternal–infant bonding.
4. Assessment of immediate skin-to-skin contact.
5. Consideration of maternal, obstetric, and neonatal factors.
6. Use of multivariable analysis to explore independent predictors.

Limitations

1. The observational design does not establish causality.
2. The study was conducted at a single center.
3. The sample size was relatively small.
4. Residual confounding may remain despite multivariable adjustment.
5. Maternal intention to breastfeed and previous breastfeeding experience may influence outcomes.
6. Long-term breastfeeding continuation was not assessed.
7. Maternal–infant bonding assessment may be influenced by the instrument and timing of assessment.

Conclusion

In this hypothetical analysis, labour analgesia was associated with a lower proportion of breastfeeding initiation within one hour, longer time to first breastfeeding, and lower rates of immediate skin-to-skin contact and satisfactory early maternal–infant bonding.

However, the relationship between labour analgesia and breastfeeding is complex, and existing evidence

remains inconsistent. [2,6,7] The observed association may partly reflect other maternal and obstetric factors accompanying the use of labour analgesia.

Labour analgesia should therefore not be considered incompatible with successful breastfeeding. Appropriate postpartum breastfeeding assistance, early uninterrupted skin-to-skin contact, and timely support for maternal–infant interaction should be encouraged for women receiving labour analgesia. [3-5]

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