

# Evaluation of regional analgesia impactions in obstetrics

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## SUMMARY

**AUTHORS' CONTRIBUTION:** (A) Study Design · (B) Data Collection · (C) Statistical Analysis · (D) Data Interpretation · (E) Manuscript Preparation · (F) Literature Search · (G) No Fund Collection

**Background:** Epidural is the most effective form of pain relief in labor of laboring women in world. The aim is to assess effect of regional analgesia on labor pain, outcome of delivery and neonates.

**Methods:** An observational study included 100 pregnant woman. At period from 2017 to 2020. By using a questionnaire interview. Each woman was interviewed for about 10 minutes. These included age, gravida, abortion, past medical history, drug history and obstetric history. Examination of vital signs, general examination, abdominal and vaginal examination, sonography to assess fetal heart rate and abdominal examination to assess uterine contraction.

**Results:** 93% of women with epidural anesthesia were used oxytocin and there was significant association between groups ( $p=0.022$ ). The labor pain was significantly high at those used oxytocin with epidural anesthesia ( $p<0.0001$ ). Nausea, vomiting, low back pain, headache, urinary incontinence and retention, dizziness and drowsiness were recorded.

**Conclusions:** Epidural analgesia was not associated with a higher assisted delivery rate and higher rate of CS. EA not cause significant maternal or fetal heart rate complications. Importantly, EA associated with short labor stage.

**Keywords:** Labor; Epidural; Analgesia; CS; Obstetrics

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## INTRODUCTION

The obstetric pain is actually the most severe pain after burn most women will endure in their lifetime [1]. The pains of labor result in a maternal stress response, which is neither beneficial for the child nor the mother [2]. Pain differs from one woman to another. Prior to the 20<sup>th</sup> century, childbirth predominantly happened in the home, without access to any medical interventions for pain management. This caused a large number of deaths among women and created an urgent need for pain management. With the development of science, it has become possible to reduce the pain resulting from labor and delivery [3].

Maternal physiologic and anatomic changes that accompany pregnancy, as well as consideration of the developing fetus, affect the conduct of anesthesia for surgery during pregnancy. Physiologic changes associated with pregnancy may affect maternal safety during anesthesia. Fetal oxygenation depends on maternal oxygen carrying capacity, maternal cardiac output, and uteroplacental perfusion. Therefore, any interventions that compromise these factors may lead to fetal asphyxia. It is often difficult to determine whether adverse fetal outcomes are the result of maternal disease, the surgical procedure, or the anesthetic [4].

This study aimed to evaluate the effect of regional analgesia on labor pain, duration, outcome and babies.

## METHODS

### Study design and setting

An observational study which is conducted at painless labor-delivery room of Al-Elwiya Maternity Educational Hospital from 2017 to 2020. This study included 100 pregnant woman, delivered by epidural analgesia.

### Ethics

The study was conducted in accordance with the Declaration of Helsinki. The consent form was approved by a local ethics committee according to Al-Elwiya Maternity Educational Hospital.

### Inclusion criteria

1. Singleton
2. Term pregnancy
3. Nine missed period

4. Healthy woman
5. No past medical history
6. Spontaneous labor onset.

### Exclusion criteria

1. Women refuse to enroll in the study.
2. Contraindication to regional analgesia (coagulation disorders, anticoagulation therapy, skin or soft tissue infection).
3. Hypertension
4. DM
5. Epilepsy.

### Data collection

By using a questionnaire interview. Each woman was interviewed for about 10 minutes. These included age, gravida, abortion, past medical history, drug history and obstetric history. Examination of vital signs, general examination, abdominal and vaginal examination, sonography to assess fetal heart rate and abdominal examination to assess uterine contraction.

### Technique

The epidural catheter is inserted at the L3–L4 or L4–L5 interspace. Monitoring continues and measured FHR every 5-15 minute. Pain scale during labor (zero no pain, 1-3 mild pain, 4-6 moderate pain, 7-10 severe pain) [5].

### Statistics

Analysis by SPSS version 25 was done. Categorical variables were presented as numbers and percentage whereas continuous variables were presented as mean and SD. Chi-square test was used to show the association between categorical variables. P value of <0.05 was considered as statistically significant.

## RESULTS

This study show that: 93% of women with epidural anesthesia were used oxytocin and there was significant association between groups ( $p=0.022$ ). The labor pain was significantly high at those used oxytocin with epidural anesthesia ( $p<0.0001$ ) (**Tab. 1.**).

The studied complication shown in **Tab. 2.** Nausea, vomiting, low back pain, headache, urinary incontinence and retention, dizziness and drowsiness were recorded (**Tab. 2.**).

## DISCUSSION

In this study, there was statistically significant association between oxytocin use and epidural anesthesia. The studies done by Anim-Somuah, et al. [6] and Zha, et al. [7] with epidural analgesia had higher rate of oxytocin use as was seen in this study.

In current study, the modes of delivery showed significant association with epidural analgesia, this disagreed with studies in Wang, et al. [8], Agrawal, et al. [9] and Wang, et al. [10].

While agree in research in Anim-Somuah, et al. [6] woman with epidural group experienced more assisted vaginal birth.

In this study the labor pain score was lower in epidural groups compare with control groups, this result agreed with result in Chinese [7].

In present study urinary retention and incontinence shown no significant association with epidural analgesia, this agreed with research done in Chinese [10,11]. While disagreed with research done in [8] woman with epidural analgesia experienced more urinary retention may be change in concentration of epidural solution use in analgesia.

In current study, we reported different side effects as nausea and vomiting showed no statistically significant with epidural analgesia, this result disagreed with result done by Grangier, et al. [12].

**Tab. 1.** History of delivery.

Variable		Epidural	No Anesthesia	P value
Oxytocin	Used	93	4	0.022
	No	2	1	
Mode of delivery	NVD	3	90	<0.0001
	CS	5	2	
Pain	Yes	3	89	<0.0001
	No	3	5	

**Tab. 2.** Complication in this study.

Complication	No.	%
Nausea	33	33
Vomiting	28	28
Low back pain	61	61
Headache	40	40
Retention of urine	12	12
Dizziness	9	9
Drowsiness	36	36
Urinary incontinence	22	22
Arthralgia	25	25

In this research headache and backache were statistically significant higher percentage in epidural groups compare with control groups, this agreed with research done by Singh, et al. [13] may be attribute to multiple factors.

## CONCLUSION

Epidural analgesia was not associated with a higher assisted delivery rate and higher rate of CS. EA not cause

significant maternal or fetal heart rate complications. Importantly, EA associated with short labor stage.

## FUNDING

None.

## CONFLICTS OF INTEREST

None.

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