

A Cross-Sectional Study to Find Out the Type of Relationship between the Use of Epidural Analgesia during Labor is Linked and Adverse Outcomes for Newborns in Iraq

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Abstract: Demographic information and data were collected from different hospitals in Baghdad, Iraq, where 500 women patients were collected. The aim of the research is to conduct a cross-sectional study to find out the type of relationship between the use of epidural analgesia during labor and the negative outcomes of newborns in Iraq. It was concluded in this study the use of epidural anesthesia leads to a negative impact on the method of delivery, in addition to the standards of newborn mothers, and epidural anesthesia has become a general method intended to reduce pain in patients' women during labor, and it can extend to newborns at childbirth. 500 patients were included and distributed into two groups (with epidural 200 patients and without epidural anesthesia 300 patients), and this study was conducted on women aged between 25 to 35 years in Iraq. The use of epidural anesthesia is a major and important factor in relieving pain during labor for pregnant women in Iraq. This effect may vary depending on the condition in which epidural anaesthesia is provided. Although epidural anaesthesia is considered safe from a health point of view, it may generate some negative effects, especially in the mother, including the presence of a high temperature in addition to that, a decrease in blood pressure.

Keywords: Anaesthesia, Epidural, Labor, Newborns, Effects.

INTRODUCTION

Epidural anesthesia is the real measure of pain control during labor by relying on the recommendations of the World Health Organization, whereby 40% of Iraqi women are relied on epidural anesthesia in labor [WHO, 2020; Butwick, A.J. *et al.*, 2018; Care Quality Commission, 2020].

The main positive aspect of this approach is the alleviation of the suffering of the woman during labour. Undoubtedly, the most effective method of local pain relief is in a study by Eater Hank 2009 [Abrão, K.C. *et al.*, 2009; Anim-Somuah, M. *et al.*, 2018]; in the use of epidural analgesia during childbirth, a number of undesirable effects of this method are the possibility of hypotension. Arterial blood, especially against the background of aortic pressure syndrome, as well as orthodontic reactions, even when using low-concentration aesthetic solutions, has an undesirable effect on the expulsion of the fetus [American Society of Anesthesiologists Task Force, 2016; Srebnik, N. *et al.*, 2020].

Observational studies report mixed results comparing epidural use with no epidural use in labor indicated no clear difference in neonatal outcomes, and there were no data for longer term childhood outcomes [Törnell, S. *et al.*, 2015; Ravelli, A.C.J. *et al.*, 2020]

MATERIAL AND METHOD

Patient Sample

Demographic information and data were collected from different hospitals in Baghdad, Iraq, where 500 women patients were collected. The aim of the research is to conduct a cross-sectional study to find out the type of relationship between the use of epidural analgesia during labor and the negative outcomes of newborns in Iraq.

Study Design

500 patients were included and distributed into two groups (with epidural and without epidural anesthesia), and this study was conducted on women aged between 25 to 35 years in Iraq.

The electronic record in the hospital was relied upon, as the data was relied on for all newborns between 2015 to 2017, which reflects the use of doctors to epidural anesthesia to patients with low doses.

Births were excluded if fetal presentation at the onset of labor was noncephalic, the fetus was stillborn before

delivery, no mode of delivery was recorded, there was a congenital anomaly or birth was by elective cesarean delivery.

Statistical Analysis

Statistical processing of data obtained on a personal computer was carried out using the SPSS 14.0 package for Windows for applied statistical software using appropriate statistical criteria. The search results are saved in the form of spreadsheets in Microsoft Access format.

Processing of variable series involved calculating the mean, standard deviation, and standard error of the mean. When comparing the obtained parameters, two independent paired-sample tests and the χ^2 test were used. Differences with a confidence level of at least 95% were recognized as significant, subject to correction for multiple comparisons, and in the case of incorrect distribution of data, non-parametric Mann-Whitney tests were used to compare two independent groups with median and percentages determined to compare independent groups.

Study Period

Work ethics were applied by obtaining all the licenses required to conduct this study, as cooperation was made with the specialized committees for the purpose of collecting data on patients. The study period was a full year, from 1-8-2018 to 2-9-2019.

Aim of Study

This paper aims to create a cross-sectional study to find out the type of relationship between the use of epidural analgesia during labor and adverse outcomes for newborns in Iraq.

RESULTS

A cross-sectional study consisted of 500 patients, and the patients were divided into two groups (the first group is Epidural 200 patients and the second group is no epidural 300 patients, as shown in figure 1).

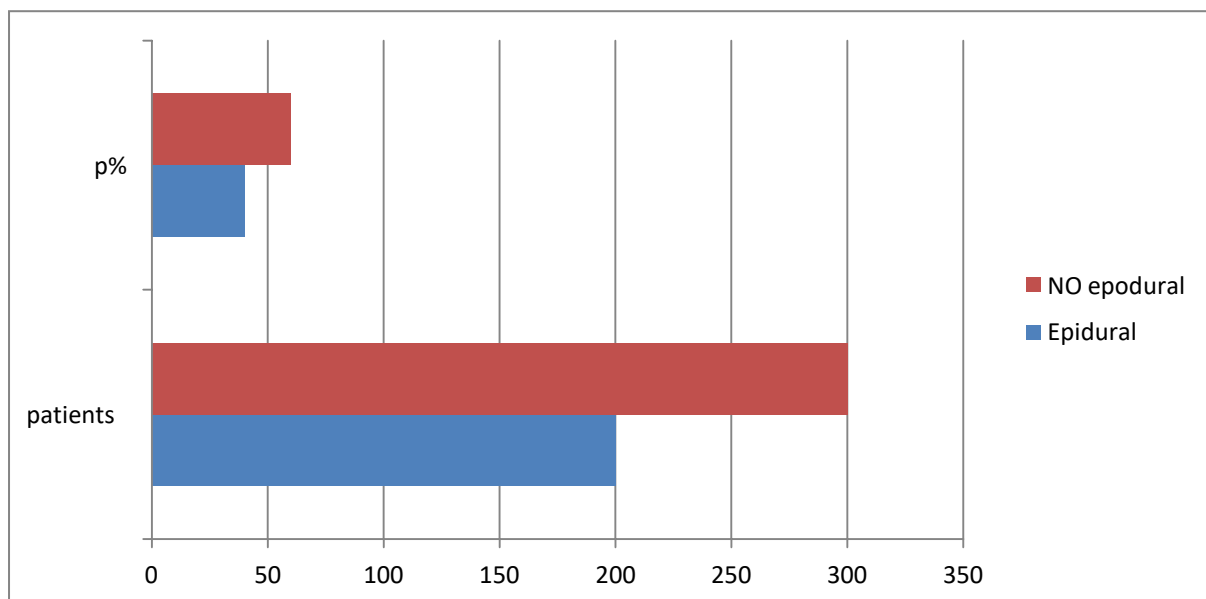


Figure 1: Distribution of patients according to Anesthetic Type

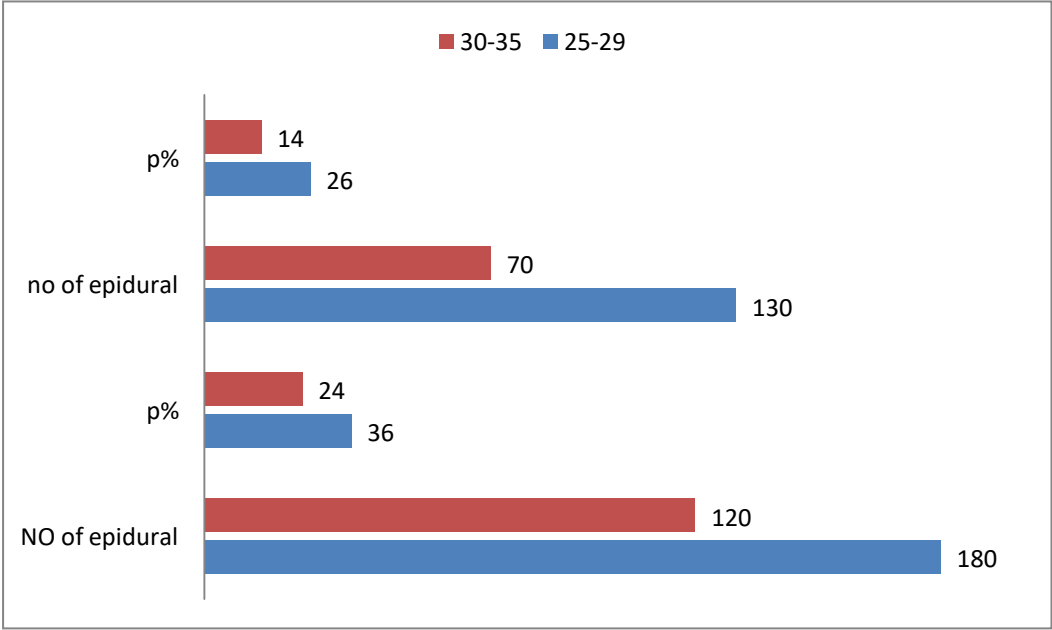


Figure 2: Distribution of patients according to age

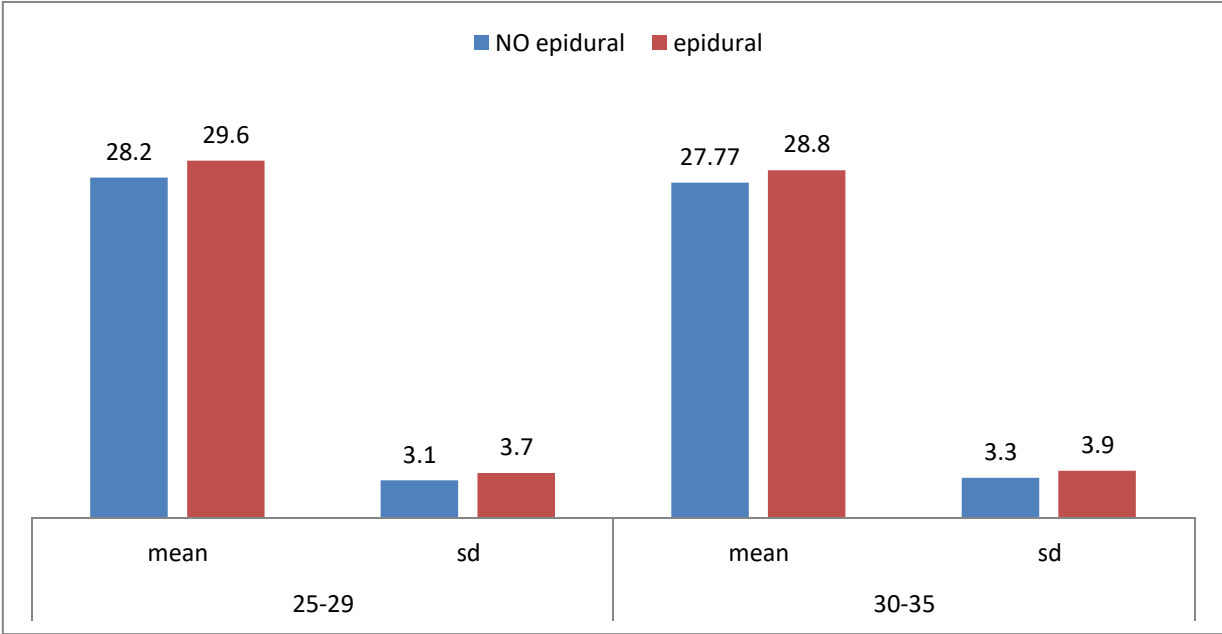


Figure 3: Distribution of patients according to BMI

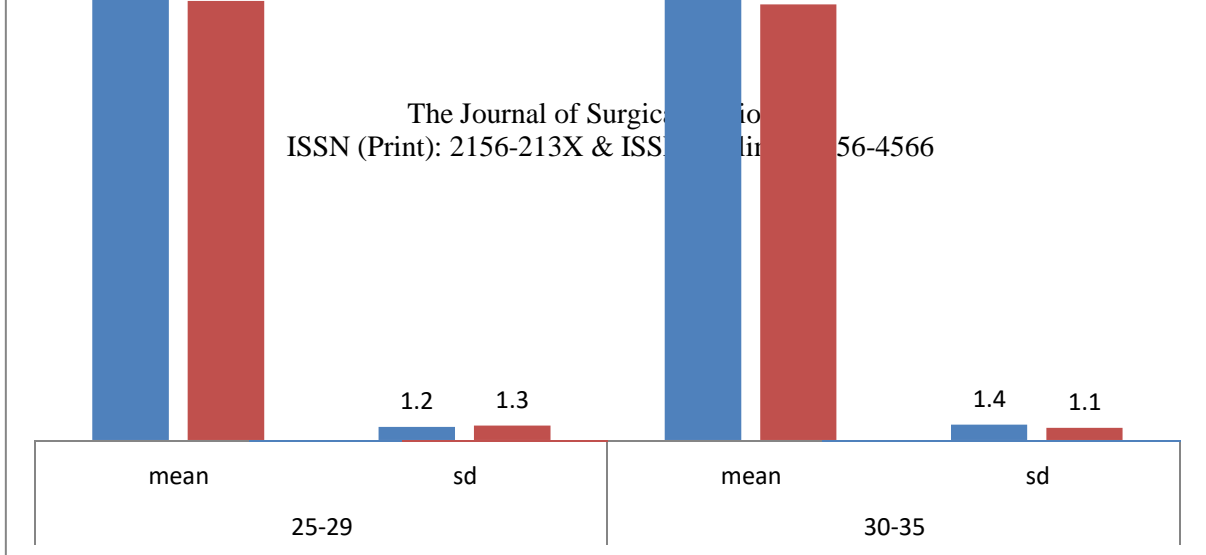


Figure 4: Results of patients according to Gestational age (weeks)

Table 1: Maternal and delivery outcomes

	EA (n)200	%	Non (n)300	%
Mode of delivery				45
Normal	150	30	225	12
Instrumental	40	8	60	3
Caesarean section	10	2	15	
stay length in hospital (h)	42 ± 28		30 ± 27	
bleeding (ml)	430 ± 317		377 ± 270	
Perineal tears (grade 3/4)	35	7.9%	30	3.88%
Satisfaction with childbirth (VAS)	6.8 ± 3.1		5.7 ± 3.9	
Duration of active phase (min)	502 ± 205		350 ± 230	

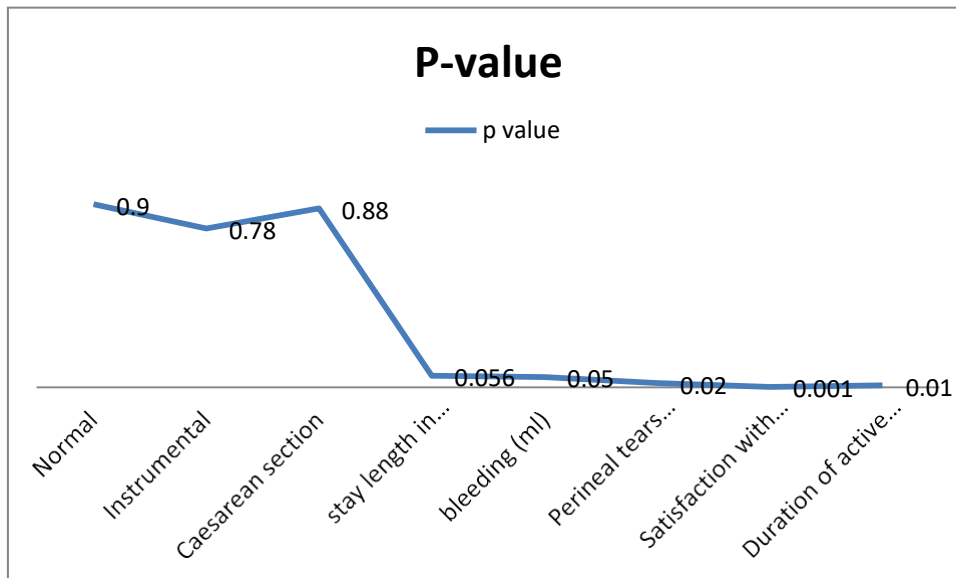


Figure 5: P-value Maternal and delivery outcomes

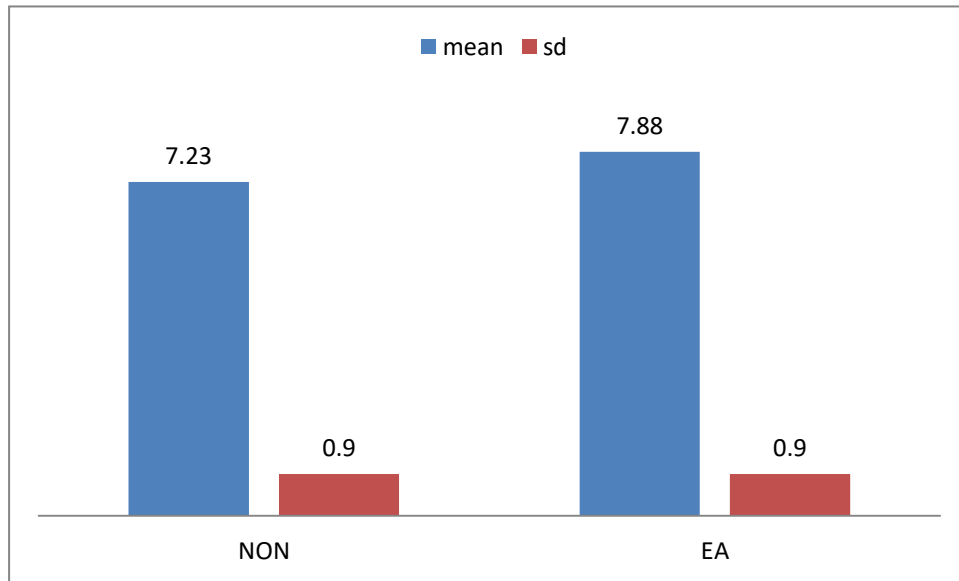


Figure 6: Results of Apgar score, points at 5 min

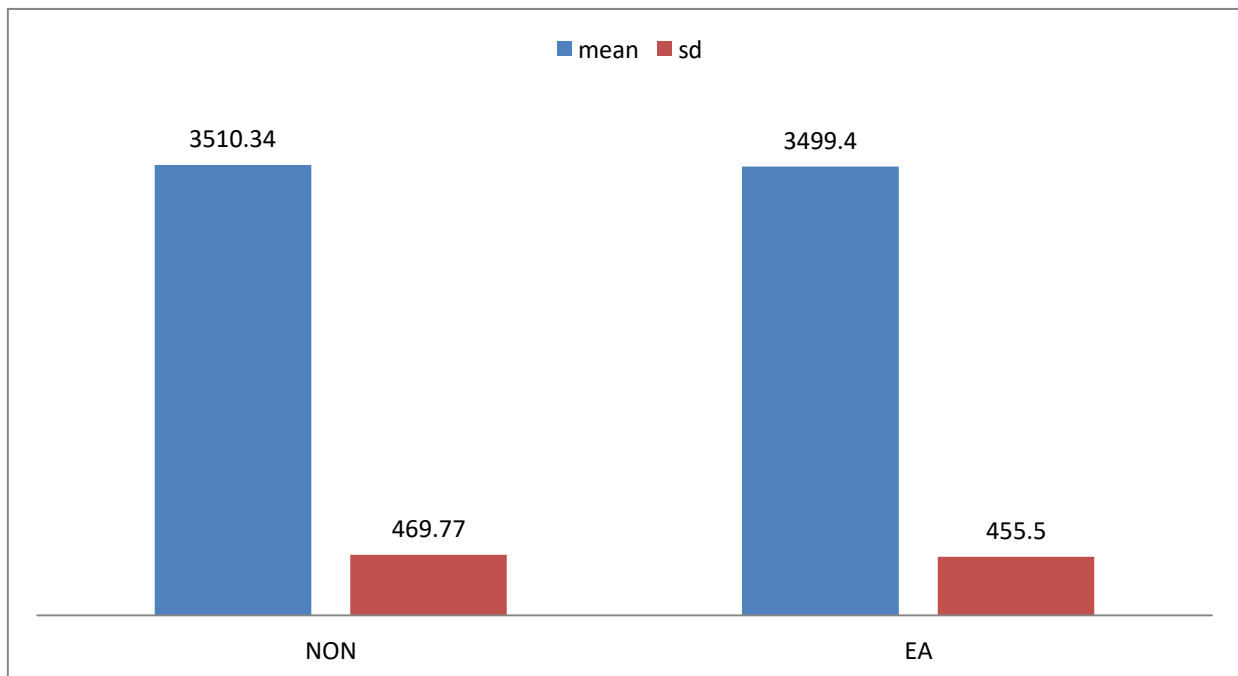


Figure 7: Neonatal outcomes according to Neonatal weight (g)

Table 2: Result of patients according to Neonatal outcomes

V	EA	NON	
Umbilical cord arterial pH	7.25 ± 0.0875	7.29 ± 0.095	<0.001
Base excess (mmol/l)	-6.55 ± 3.8	-6.11 ± 4.4	<0.01

DISCUSSION

A cross-sectional study consisted of 500 patients, and the patients were divided into two groups (the first group is Epidural 200 patients, and the second group is non epidural 300).

Patients were divided according to their age into two groups (25-29 years old for the EPidural patient group for 180 patients with 36% distributing and from 30-35 years old for 120 patients with 24%). As for the non-epidural group, patients were distributed (from 25-29 years old for 130 patients with 26% of the population and from 30-35 years old for 70 patients, with 14%).

In Figure 4, the results of patients according to Gestational age (weeks).

We find that the gestational age (weeks) was lower in the total EA, and the mean value and sd of the

gestational age were for the 25-29 age group (39.86 + 1.3) and the 30-35 age group (39.55 + 1.1) Statistical tests showed that there was no statistical relationship or differences between the two groups in terms of perineal rupture, whether it was of the third or fourth degree of risk of births, and this leads to high rates of risk in anal sphincter injury.

The Apgar score was measured in 5 minutes, and in the group of patients who underwent epidural anesthesia, a statistical difference was noted at 0.001 when compared with the second group.

In this study, the results show us that there is a significant effect of epidural anesthesia on the outcome of labor, through a noticeable increase in the duration, in addition to an increase in its probability, but at the same time, it had no effect on the rate of caesarean section. When comparing our study, we find that it corresponds with the results of other studies, such as Ryan Keeler 2012 and the study by Warter soratin 2018 that the use of epidural anesthesia in the early stages of labor contributes to or leads to an increase in caesarean section rates [Turner, J. *et al.*, 2020]

The main reason in the prolonged active phase of labor is the high gestational age, which is one of the reasons leading to the length of the active phase of labor, and this can be explained by the presence of a frequency of increase in instrumental deliveries. When using epidural anesthesia for the duration of labour, but in the 2016 Ryan Gibbs study, which relied on a meta-analysis to analyze its results, it was found that the use of epidural anesthesia contributes to the length of the active first stage of labor by about 39 minutes [Dickersin, K. 1989; Anim-Somuah, M. *et al.*, 2011; Leighton, B.L. *et al.*, 2002; Cheng, Y.W. *et al.*, 2006]

Other studies showed, through the use of Meta-analysis, that there was a statistically significant relationship between the risk of bleeding when using epidural anesthesia to patients, and this relationship was confirmed by most European studies, which relied on the use of a cross-sectional study for a large group of patients.

CONCLUSION

It was concluded in this study the use of epidural anesthesia leads to a negative impact on the method of delivery, in addition to the standards of newborn mothers, and epidural anesthesia has become a general method intended to reduce pain in patients' women during labour, and it can extend to newborns at childbirth [Gomar, C. *et al.*, 2000]

RECOMMENDATION

There is no preferred or unfavorable time to have anesthesia during labour; however, it is given during the active phase of labor, or when feel frequent contractions or dilation of the cervix.

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