

The Use of Quality-of-Life Measures in Assessing the Quality of Types of Anesthesia in Pregnant Patients with Anemia

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Abstract: This paper aims to know quality-of-life measures in assessing the quality of types of anaesthesia in pregnant patients with Anemia. In this study, 210 pregnant patients with anemia were recruited; the study aimed to know the quality of anaesthesia and its effect on patients' quality of life. An observational, descriptive, and retrospective study was conducted on pregnant women with anemia, and the effect of anaesthesia on patients' quality of life was investigated. Data were collected from different hospitals in Iraq from October 2020 to September 2021. In individuals with anemia and their families or caregivers, psychosocial problems have also been reported and assessed according to VAS. The results which found patients were distributed according to the group of patients for 135 and the control group for 75 patients, and the average age ranged between 22-40 years, Birth weight MEAN±SD of patient group 3022.5±450.1 and for control 3155.3±423.8, neonatal intensive care unit% were 5% for patients, and The quality of life of the patients was evaluated, and the study revealed that compared to the general anaesthesia, the spinal anaesthesia allows the surgery to be performed at an early date, and statistical differences were found in most of the items of the questionnaire distributed to pregnant women.

Keywords: Anaesthesia, General, Spinal, Pregnant, Patients, Anemia.

INTRODUCTION

In the management of anaesthesia for a pregnant patient, the well-being of the mother and fetus must be considered among the goals, which must be balanced [Sng, B.L. *et al.*, 2009]. In order to obtain this purpose, it is important to take into account some of the theoretical elements that we will describe in this research [Eisenach, J.C. *et al.*, 2008; Ismail, S. *et al.*, 2012], namely the physiological, anatomical, and pharmacological changes that occur during pregnancy and the most appropriate time for the procedure Surgery, the most appropriate type of anesthesia recommended and knowledge of prohibited or potentially dangerous drugs [Milman, N, 2011; Gürsoy, C. *et al.*, 2014; de Oliveira, M.F. *et al.*, 2015].

During pregnancy for women with anemia, known adaptations occur and form the basis of anaesthesia administration and are specifically associated with hormonal changes, while subsequent changes are associated with mechanical effects from increased uterine size, increased fetal metabolic requirements, and decreased circulatory resistance in the placenta [Pawluski, J.L. *et al.*, 2007; Dharmalingam, T.K. *et al.*, 2013; McLean, E. *et al.*, 2009].

Anemia and pregnancy are a series of conditions that occur during pregnancy, complicate its course, and usually disappear shortly after birth. Because

the prevalence of anemia is much higher than in non-pregnant women [Bencaiova, G. *et al.*, 2002; Milman, N, 2011; Breyman, C. *et al.*, 2017; Levi, M. *et al.*, 2019]

[Breyman, C. *et al.*, 2017; Levi, M. *et al.*, 2019; Nonterah, E.A. *et al.*, 2019; Mohamed, M.A. *et al.*, 2012]

Although anemia during pregnancy is generally physiological in nature, iron deficiency during prenatal care must be recognized and distinguished from other types of anaemia due to vitamins, folic acid, vitamin B12, or other deficiencies for timely treatment. [Levi, M. *et al.*, 2019]

The World Health Organization (WHO) has estimated that 30% of women of childbearing age have anemia. This percentage rises in pregnant women to more than 40%. In addition, however, there is a group of pregnant women who are iron deficient and do not have anaemia [Engwa, G.A. *et al.*, 2017] but are at risk of developing iron deficiency anaemia. [CDCP, 1998]

Pregnant women of childbearing age who have vitamin deficiencies or low iron stores are at increased risk of developing iron deficiency anaemia during pregnancy. Therefore, timely identification of iron deficiency anaemia and the dose of ferritin are of vital importance for optimal

treatment and follow-up before pregnancy and during prenatal examinations (9).

MATERIALS AND METHODS

An observational, descriptive, and retrospective study was conducted on pregnant women with anemia, and the effect of anaesthesia on patients' quality of life was investigated. Data were collected from different hospitals in Iraq from October 2020 to September 2021.

In this study, 210 patients of pregnant women with anemia who agreed to participate in the study were recruited.

A specific questionnaire was applied to 210 pregnant women patients with anemia aged between 22-40 years.

Exclusion criteria included patients who underwent vaginal surgery. In addition, incomplete medical records and patients over 40 years of age were excluded.

Through a review of the international literature, socio-demographic factors (age and level of education) have been suggested; Socio-demographic factors - Mode of delivery.

A questionnaire was designed by the researchers conducting this research, a database was created using Microsoft Access, a statistical analysis was performed using IBM SOFT SPSS 22 for Windows, and the final document was prepared with the Microsoft Office package.

Absolute frequencies were calculated for the qualitative, prevalence, quantitative, mean, and standard deviation variables, with 95% confidence intervals expected in all cases.

RESULTS

To determine the factors associated with the prevalence of anemia as well as the type of anaesthesia used in women, a VAS was used to assess patients' quality of life; Prevalence ratios and 95% confidence intervals were calculated.

The intensity of the pain experienced by the patients was assessed according to the VAS method; on a 10 cm straight line segment, the patient notes the intensity of the pain. The beginning of the line on the left corresponds to the absence of pain, and the end of the segment on the right corresponds to unbearable pain

The presence of physiological anemia during pregnancy, according to the hemodynamic theory, is recognized by an increase in the volume of plasma and red blood cells, which leads to a decrease in the level of hemoglobin due to the dilution of the blood. In this regard, the evidence indicates that from week 6 to week 12 of pregnancy, plasma volume changes from 15% to 50% for weeks 30 to 34 of gestation. After week 34 until the end of the week, these values stabilize, and this generates an important change in the mother's hemodynamics, which is attributed to an increase in renin in the renal plasma and a decrease in the atrial peptide. The total gain at term is 1100 to 1600 mL, resulting in a plasma volume of 4700 to 5200 mL, which is 30% to 50% compared to non-pregnant women. [Nonterah, E.A. *et al.*, 2019; Mohamed, M.A. *et al.*, 2012]

It is estimated that between 2 to 5 percent of the Iraqi population is carriers of the infection. In individuals with anemia and their families or caregivers, psychosocial problems have also been reported, assessed according to VAS

Table 1: Demographic characteristics of patients according to anemia

Variable	Patient, N=135	Control, N=75	P-value
Age	31.8±7.7	30.2±6.6	0.85
BMI	29.3±3.7	28.5±4.4	0.06
comorbidities			
Obesity	50	27	
Arrhythmia	33	14	
Hypertension	20	10	0.056
Heart disease	15	10	
Others	17	14	
Previous spinal anaesthesia	55	30	0.078
Previous General Anaesthesia	80	45	<0.001
number of children			
0	60	30	
1	50	28	0.23

> 2	25	17	
Anaesthesia type used			
spinal anaesthesia	70	30	0.33
General Anaesthesia	60	45	-0.0102
Parity; n (%)			
Nulliparous	45	24	
Multiparous	90	51	<0.001
Gestational age at delivery(weeks)MEAN±SD	39.3±0.6	38.7±0.8	0.087
Mode of delivery			
CS, N	135	75	
postpartum haemorrhage, N	30	20	
pregnancy-induced hypertension	50	33	<0.05
gestational diabetes mellitus	45	22	

BMI: body mass index, CS: Caesarean section, P-VALUE: p-value is the probability of obtaining results at least as extreme as the observed results of a statistical hypothesis test, N=number

Table 2: results of anemia according to Neonatal

Variable	Patient	Control	P-value
Birth weight MEAN±SD	3022.5±450.1	3155.3±423.8	0.03
low birth weight	19	5	0.005
Apgar 5 min	22	9	0.04
Head circumference	34.06±1.73	34.23±2.20	0.45
The neonatal intensive care unit%	5	2	0.022

Table 3: Assessment of quality of life for pregnant patients who underwent anaesthesia 24 hours after caesarean section

Variable	General anaesthesia	Spinal anaesthesia	P-value
Depression	70±11.2	49.5±8.8	0.33
Anxiety	77.7±12.6	49.9±5.6	0.06
Pain and Hurt	80.2±15.5	53±9.9	0.002
Usual activities	75.7±20.2	56.6±12.4	0.05
Daily Activities	63.1±18.8	38.8±15.2	0.01

Table 4: Assessment of quality of life for pregnant patients who underwent anaesthesia seven days after caesarean section

Variable	General anaesthesia	Spinal anaesthesia	P value
Depression	74±14.4	50.5±9.1	0.55
Anxiety	80.8±13.3	50.9±7.7	0.07
Pain and Hurt	83.3±17.7	60.2±10.2	<0.001
Usual activities	79.1±22.2	62.3±14.4	0.0424
Daily Activities	76.8±20	64.1±17.2	0.05

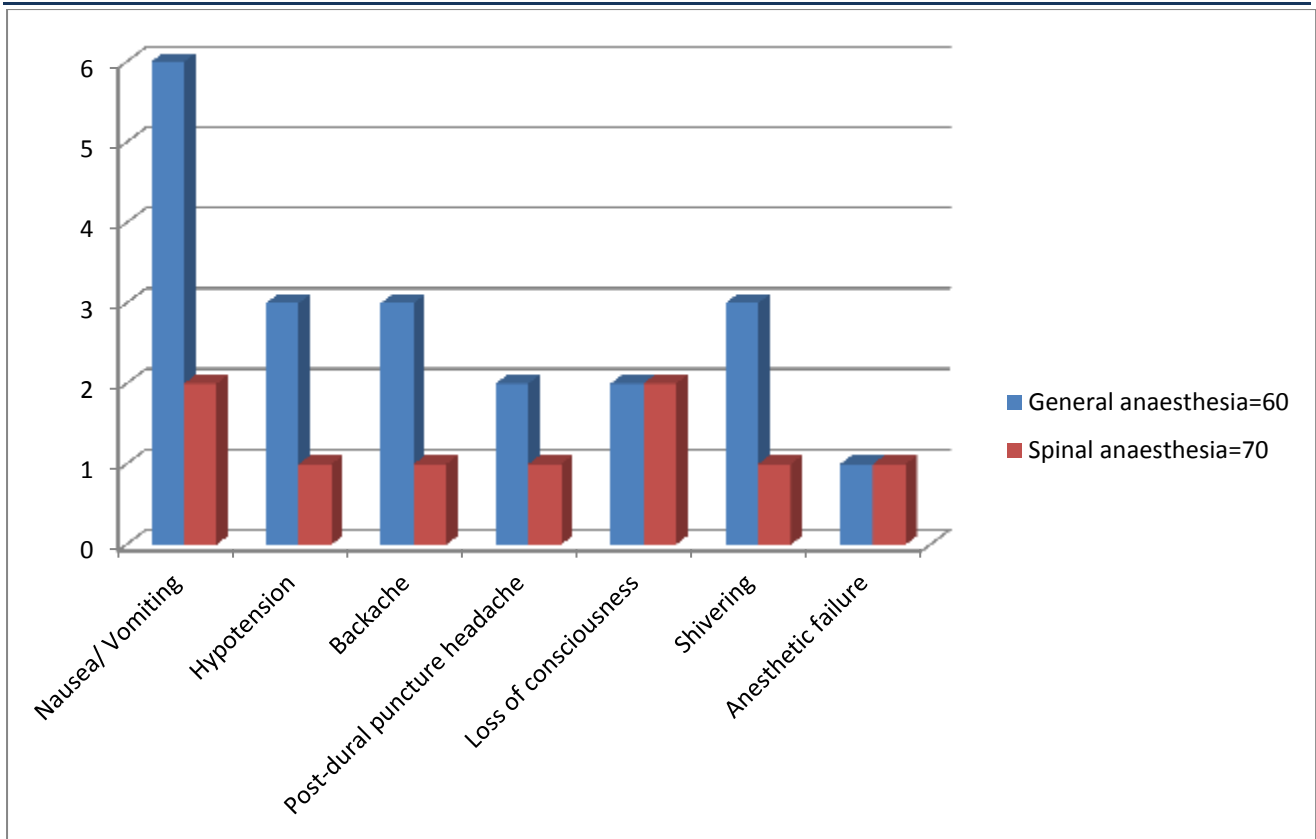


Fig 1: Complications of anaesthesia on patients' study

DISCUSSION

In this study, 210 pregnant patients with anemia were recruited; the study aimed to know the quality of anaesthesia and its effect on patients' quality of life.

The study patients were distributed according to the group of patients for 135 and the control group for 75 patients, and the average age ranged between 22-40 years

High body mass index for pregnant women over the age of 35 years, as well as the presence of comorbidities, especially obesity, for 50 patients.

In this study, a previous history of spinal anaesthesia was found for 55 patients, in addition to a previous history of 80 patients who underwent general anaesthesia.

The patients were distributed according to the type of anaesthesia used in this study for 70 spinal anaesthesia patients with 51.8% and 60 patients who underwent general anaesthesia with 48.1%.

In this study, the exclusion criteria were patients who underwent vaginal surgery and included only patients who underwent caesarean section, as shown in Table 1.

In Table 2, the results of anemia are evaluated according to Neonatal, and The Birth weight MEAN±SD for the patient's group was 3022.5 ± 450.1, as for the control group, 3155.3 ± 423.8, and this decrease in weight is due to the effect of anaemia on the patients, and a statistically significant relationship was found with a p-value of 0.03

The study also revealed an Apgar score for 22 patients with 5 minutes in the group of patients and for nine patients with the control group.

Our current study is in agreement with the study of Jane Close 2008, which demonstrated the role of anemia on patients who underwent general anaesthesia for pregnant women.

In this work, we found a high rate of satisfaction as 93.4% would perform analgesia again for childbirth, 98.01% would recommend it to someone else, who had previous deliveries, and 70.8% had a positive experience compared to the previous one. This is certainly related to the high analgesic efficacy of the technique used. As we have seen and according to what the authors consulted have found, spinal anaesthesia has been relied heavily on the severity of complications as well as providing a better quality of life for pregnant patients.

Satisfaction is a variable that is difficult to assess because it is somewhat subjective and depends on many factors apart from pain relief. In our current study, positive results were found for pregnant women who underwent spinal anaesthesia, which affected the high rate of satisfaction among the respondents of this study.

The quality of life of the patients was evaluated, and the study revealed that compared to the general anesthesia, the spinal anesthesia allows the surgery to be performed at an early date, and statistical differences were found in most of the items of the questionnaire distributed to pregnant women.

Differences in side effects, such as headache after an epidural puncture, nausea, and vomiting, and postoperative complications requiring anesthetic intervention were critical because complications were more common in women who underwent general anaesthesia.

CONCLUSION

Maternal mortality associated with spinal anaesthesia decreases. Therefore, spinal anaesthesia for caesarean delivery is often the preferred choice for caregivers when balancing risks and benefits for the mother and her fetus.

Available data suggest a trend towards spinal anaesthesia for elective caesarean section, and this is believed to be due to the perceived advantages of simplicity of the technique, rapid administration, and initiation of anaesthesia reduced risks of systemic toxicity and spinal anaesthesia block density.

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