

A Cross-Sectional Study of Anesthesia Complications to Iraqi Women Who Underwent Cesarean Section

Dr. Hayder Abbas Alkayssi¹, Dr. Enas Falih Hassoon² and Dr. Akeel Maktoof Adob³

¹M.B.Ch.B. Diploma Anaesthesia C.A.B.A (ICU)Regional Anesth. & Pain Mx (Subspeciality)Ministry of Higher Education and Scientific Research, College of Medicine, University of Anbar, Anbar, Iraq

²M.B.Ch.B. \ D.A. \ (Anesthetist)Iraqi Ministry of Health, Baghdad AL-Karkh Health Directorate, AL-Karkh Maternity Hospital, Baghdad, Iraq.

³M.B.Ch.B. \ D.A. \ (Anesthetist)Iraqi Ministry of Health, Thi Qar Health Office, Habbobi Teaching Hospital for Obstetrics & Gynecology, Thi-Qar, Iraq

Abstract: A cross-sectional study was conducted on pregnant Iraqi women who underwent a caesarean section, where information and demographic data for pregnant women were collected from different hospitals in Iraq. In this study, 200 female patients who underwent caesarean delivery were collected. Where in this paper, we aim to know the risks of general anaesthesia for caesarean section compared to other anaesthesia techniques and the potential complications we may face when using it. This study was designed using a free-form model to include 200 patients who underwent general and spinal anaesthesia. Where one of the primary and demographic information of the patients was collected and analysed based on the IBM soft SPSS program, and the results that were found to increase revealed mortality for pregnant women who underwent spinal anaesthesia for eight patients with 10%. As for patients who underwent general anaesthesia, the prevalence of deaths was (3 patients with 2.5%) and statistical differences were found. In patients over 30 years of age who have blood loss <1000 mL and whose body mass index are greater than 30 kg/m².

Keywords: Mortality, anaesthesia, complications, caesarean, BMI, spinal, GA.

INTRODUCTION

A caesarean section is a procedure that can be performed under general or local anaesthesia [Devroe, S. *et al.*, 2015; Hawkins, J.L. *et al.*, 2011]. Since general anaesthesia in the caesarean section is associated with various complications, it is less frequently used as the preferred anaesthesia method. Despite this, between 0.5% and 1% of caesarean sections continue to be performed under general anaesthesia [Guglielminotti, J. *et al.*, 2019; Palmer, E. *et al.*, 2018].

Aim of general anaesthesia in a caesarean section is to maintain adequate oxygenation in the mother and fetus, with minimal transfer of anaesthetic drugs across the placenta. Anaesthesia protocols limit the use of drugs that have a terminal effect on the fetus [Tsen, L.C, 2014; Butwick, A.J. *et al.*, 2016; Bauer, M.E. *et al.*, 2016]. In addition to the above fact that a pregnant woman is at greater risk of aspiration of the contents of the stomach and airway with changes in its anatomy making intubation difficult and an increased risk of awakening during the procedure, general anaesthesia for caesarean section becomes a real anaesthetic challenge [Cobb, B.T. *et al.*, 2019; Butwick, A.J. *et al.*, 2018].

Through previous studies on the effect of general anaesthesia on pregnant women who underwent caesarean delivery, the most common complications of anaesthesia were arterial hypotension (19.6%), low heart rate (7.6%),

nausea (7.1%), and paraesthesia during puncture and catheterization (6.6 %) [Páez L, J.J. *et al.*, 2012].

Exacerbation of lumbosacral sciatica in the postoperative period was recorded in 94 women (4.3%), and in the vast majority (91 patients), sciatica was diagnosed even before pregnancy.

(Palanysami. *et al.*) analysed the rate and indications of general anaesthesia in caesarean section by following up on patients who underwent caesarean section at a third hospital in 2000–to 2005, with a total of 15468 caesarean sections. Of these, 0.5-1% were performed under general anaesthesia, and 85.7% were administered due to the need for immediate termination of pregnancy, i.e., emergency caesarean section. When analysing the indications for general anaesthesia, it turns out that 50 to 68.4% of caesarean sections performed under general anaesthesia were due to the belief that there was no time to perform axonal anaesthesia, and between 11.1 and 33.3% were due to official contraindications. [Afolabi, B.B. *et al.*, 2012; Torkan, B. *et al.*, 2009]

In this review, we will look at the benefits and risks of general anaesthesia for caesarean section compared to other anaesthesia techniques, the potential complications we may face when using it and how to manage them [Kavosi, Z. *et al.*, 2015; Huang, K. *et al.*, 2012].

MATERIAL AND METHOD

Patient sample

A cross-sectional study was conducted on pregnant Iraqi women who underwent a caesarean section, where information and demographic data for pregnant women were collected from different hospitals in Iraq.

In this study, Were collected 200 female patients who underwent caesarean delivery. Where in this paper, we aim to know the risks of general anaesthesia for caesarean section compared to other anaesthesia techniques, the potential complications we may face when using it.

Study design

A cross-sectional study was conducted on pregnant women undergoing a caesarean section, in which 200 patients were included, and the methods used in anaesthesia were general and spinal.

Patients' primary data was collected, including age, body particulate, duration of childbirth, and hospital stay after surgery.

The patients were divided according to the type of anaesthesia into 120 patients who underwent general anaesthesia and 80 patients who underwent anaesthesia spinal.

statistical analysis program SPSS 25 IBM soft was also relied to analyse data and demographic information of the patients, where the age rates were represented by S.D. standard deviation values.

Statistical differences between the variables were also calculated to find out the effect of complications that are generated as a result of anaesthesia on pregnant women.

Study period

Cooperated with the special committees for the purpose of obtaining the necessary and required approvals for the purpose of collecting patients and demographic information.

Patients were evaluated through advanced follow-up to the complications that occurred, and the study period was for a one year.

Which include Assessment of complications, collecting primary and demographic data for patients, in addition to analysing data and results for patients.

Aim of study

This paper aims to create a cross-sectional study to know the complications of women Iraqi who underwent caesarean section result anaesthesia.

RESULTS

Table 1: Demographic and clinical characteristics of patients who underwent anaesthesia

Variable	GA	SA	P value
Age (years) mean \pm SD	29.5 \pm 10.3	30.3 \pm 11.2	0.83
Body mass index mean \pm SD	30.8 \pm 5.9	31.1 \pm 6.1	0.04
Gestational age (weeks)	38.6 \pm 1.3	38.2 \pm 1.4	0.99
Duration of surgery (min)	70.2 \pm 19.9	68.8 \pm 21.6	0.02
Post-operative stay (days)	4 \pm 2	5 \pm 6	0.001
Estimated blood loss (ml)	600 \pm 322	622 \pm 310	0.01

Table 2: Outcomes results of anaesthesia complications on patients who underwent caesarean section

Variable	GA	SA	P-value
infection	3	5	0.56
anaesthesia reaction	2	3	0.89
Haemorrhage	2	4	0.45
bladder injury	1	4	0.05
increase risk for subsequent pregnancy	4	2	0.07
placenta	3	4	0.88

arterial hypotension	6	4	0.77
nausea	7	8	0.86

Table 3: Results related to intraoperative risk factors

Variable	GA N=28	SA N=34	P-value
Age			
<30	10	14	0.033
≥30	18	20	0.55
BMI			
Normal	6	5	0.94
Overweight	7	10	0.56
Obese	15	19	0.09
Blood loss			
<1000 mL	20	29	0.001
≥1000 mL	8	5	0.08

Table 4: Outcomes results of patients according to morbidity

Variable	GA (N=28)	SA (N=34)	P-value
Age			
<30	0	1	0.55
≥30	1	1	0.55
BMI			
Normal	0	0	0.94
Overweight	0	0	0.56
Obese	1	3	0.09
Blood loss			
<1000 mL	1	2	0.001
≥1000 mL	0	0	0.08
Length of hospital stay (days)			
≤7	0	1	

>7	0	0	
----	---	---	--

Table 5: Apgar score with outcomes results of patients

Variable	GA no complications N=92	GA with complications (N=28)	SA no complication N=46	SA with complication N=34
<7 at 1 minute	12	3	4	2
≥7 at 1 minute	30	12	14	12
<7 at 5 minutes	8	2	6	3
≥7 at 5 minutes	40	11	26	17

DISCUSSION

In this study, 200 Iraqi pregnant women patients were collected to know the effect of anaesthesia and the complications it generates for the patients who underwent caesarean section.

Patients were distributed according to the type of anaesthesia (120 female patients who underwent general anaesthesia and 80 female patients who underwent spinal anaesthesia), and the mean value was to ages Patients (general anaesthesia: 29.5±10.3) (lumbar 30.3±11.2) A high BMI was detected in more than 60% of patients in both groups, and a statistically significant relationship was found at the p-value., 1 for Post-operative. stay (days) as shown in Table 1.

The patients were distributed according to the complications (where it was noted that the rate and severity of complications increased in patients who underwent spinal anaesthesia for 34 patients with 42.5 % of the patients. As for patients who underwent general anaesthesia, a decrease in the rate of complications was noted (28 patients with 23.3%). The most common complication in this study was (arterial hypotension, Haemorrhage, and nausea).

The prevalence of complications was observed in patients over 30 years of age (18 patients with GA) (20 patients with SA).

In this study, increase mortality was revealed for pregnant women who underwent spinal anaesthesia for eight patients with 10%. As for patients who underwent general anaesthesia, the prevalence of deaths was (3 patients with 2.5 %) and statistical differences

were found. In patients over 30 years of age who have blood loss <1000 mL and whose body mass index is greater than 30 kg/m²) as shown in Table 4

Through previous studies, we note that there are some studies that confirm the validity of our study, such as (Rain 2009), where the most common complications were high blood pressure in addition to that bleeding, which represents more than 30% of admission to the intensive care unit.

Nonetheless, the use of the Apgar score in the determination of neonatal outcome is subjective. [ACOG, 2007; Lamon, A.M. *et al.*, 2016] Despite this limitation, it remains an An important tool for standardized assessment of new-borns globally, and especially in institutions like ours where umbilical venous pH determination is not routinely done. [Gehling, M. *et al.*, 2009; Hindle, A, 2008] Our study suggests that despite its subjective nature, Apgar scores remain a reliable measure of neonatal wellbeing.

In other studies (Tsai et al.8 published in 2011) regarding other factors that should be taken into account when determining the type of anaesthesia to be used in a caesarean section where 303,834 women were included 30 days after surgery, and the study concluded that general anaesthesia has lower risks for complications from neuroanaesthesia; Odds ratio: 3.73 (95% CI, 3.07-4.53). This increased risk of surgical wound infection from spinal anaesthesia can increase patients' hospital stay.

CONCLUSION

In this study, we conclude that there are fewer complications from spinal anaesthesia when using general anaesthesia in caesarean section to pregnant women, as some previous studies confirmed the validity of our studies.

It is high blood pressure in addition to that bleeding, which represents more than 30% of admission to the intensive care unit.

Pregnant women under general anaesthesia for caesarean delivery have a higher rate of awakening during the operation than patients in general, especially during childbirth, and especially it is one of the complications that can later cause the development of post-traumatic stress.

RECOMMENDATION

General anesthesia is and will remain a mainstay of obstetric anesthesia, so we must know how to administer it properly, taking into account the risks it can bring to the mother and the fetus and how to manage its potential complications [EuroQoL, 1999].

The fact that it is used less every day means that anesthesiologists are less likely to perform general anesthesia in caesarean sections, giving them less experience with this technique, which has special considerations and is usually required in emergency and emergency caesarean sections.

Finally, we believe it would be beneficial to follow up on patients undergoing general anaesthesia for caesarean section in Iraq so that we can better assess its indications, associated complications, and long-term prognosis, for both mother and newborn.

REFERENCES

- Devroe, S., Van de Velde, M. and Rex, S. "General anesthesia for caesarean section." *Current Opinion in Anesthesiology* 28.3 (2015): 240-246.
- Hawkins, J.L., Chang, J., Palmer, S.K., Gibbs, C.P. and Callaghan, W.M. "Anesthesia-related maternal mortality in the United States: 1979–2002." *Obstetrics & Gynecology* 117.1 (2011): 69-74.
- Guglielminotti, J., Landau, R. and Li, G. "Adverse events and factors associated with potentially avoidable use of general anesthesia in cesarean deliveries." *Anesthesiology* 130.6 (2019): 912-922.
- Palmer, E., Ciechanowicz, S., Reeve, A., Harris, S., Wong, D.J.N. and Sultan, P. "Operating room-to-incision interval and neonatal outcome in emergency caesarean section: a retrospective 5-year cohort study." *Anaesthesia* 73.7 (2018): 825-831.
- Tsen, L.C. "Anesthesia for cesarean delivery, Chestnut's Obstetric Anesthesia Principles and Practice." 5th edition, Elsevier (2014): 559–560.
- Butwick, A.J., Blumenfeld, Y.J., Brookfield, K.F., Nelson, L.M. and Weiniger, C.F. "Racial and ethnic disparities in mode of anesthesia for cesarean delivery." *Anesthesia and analgesia* 122.2 (2016): 472–479.
- Bauer, M.E. and Mhyre, J.M. "Active management of labor epidural analgesia is the key to successful conversion of epidural analgesia to cesarean delivery anesthesia." *Anesthesia & Analgesia* 123.5 (2016): 1074-1076.
- Cobb, B.T., Lane-Fall, M.B., Month, R.C., Onuoha, O.C., Srinivas, S.K. and Neuman, M.D. "Anesthesiologist specialization and use of general anesthesia for cesarean delivery." *Anesthesiology* 130.2 (2019): 237-246.
- Butwick, A.J. and Palanisamy, A. "Mode of anaesthesia for Caesarean delivery and maternal morbidity: can we overcome confounding by indication?." *British journal of anaesthesia* 120.4 (2018): 621-623.
- Páez L, J.J. and Navarro V, J.R. "Regional versus general anesthesia for cesarean section delivery." *Colombian Journal of Anesthesiology* 40.3 (2012): 203-206.
- Afolabi, B.B. and Lesi, F.E. "Regional versus general anaesthesia for caesarean section." *Cochrane database of systematic reviews* 10 (2012):CD004350.
- Kavosi, Z., Keshtkaran, A., Setoodehzadeh, F., Kasraeian, M., Khammarnia, M. and Eslahi, M. "A comparison of mothers' quality of life after normal vaginal, cesarean, and water birth deliveries." *International journal of community based nursing and midwifery* 3.3 (2015): 198-204.
- Huang, K., Tao, F., Liu, L. and Wu, X. "Does delivery mode affect women's postpartum quality of life in rural China?." *Journal of clinical nursing* 21.11-12 (2012): 1534-1543.
- Torkan, B., Parsay, S., Lamyian, M., Kazemnejad, A. and Montazeri, A. "Postnatal quality of life in women after normal vaginal delivery and caesarean section." *BMC pregnancy and childbirth* 9.1 (2009): 1-7.

15. The EuroQol Group. "EuroQol-a new facility for the measurement of health-related quality of life." *Health policy* 16.3 (1990): 199-208
16. American College of Obstetricians and Gynecologists. "ACOG Committee Opinion No. 386 November 2007: cesarean delivery on maternal request." *Obstetrics and gynecology* 110.5 (2007): 1209-1212.
17. Lamon, A.M. and Habib, A.S. "Managing anesthesia for cesarean section in obese patients: current perspectives." *Local and regional anesthesia* 9 (2016): 45 -57.
18. Gehling, M. and Tryba, M. "Risks and side-effects of intrathecal morphine combined with spinal anaesthesia: a meta-analysis." *Anaesthesia* 64.6 (2009): 643-651.
19. Hindle, A. "Intrathecal opioids in the management of acute postoperative pain. Contin Educ Anaesthesia." *Crit Care Pain* 8.3 (2008): 81-85.

Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:

Alkayssi, H.Y., Hassoon, E.E. and Adob, A.M. "A Cross-Sectional Study of Anesthesia Complications to Iraqi Women Who Underwent Cesarean Section." *Sarcouncil Journal of Medicine and Surgery* 1.4 (2022): pp 1-6