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Original Research

Assessment of anesthetic complications in Labor and delivery: An observational study

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ABSTRACT:
Background: The present study was undertaken for assessing anesthetic complications in Labor and delivery. **Materials & methods:** A total of 200 subjects were enrolled. Complete demographic and clinical details of all the subjects was recorded. Only those subjects were enrolled which were pregnant and scheduled to undergo delivery within time duration of present study. Anesthesia was delivered in the Labor room and thorough observation of all the subjects was done to evaluate anesthesia related complications. All the results were recorded in Microsoft excel sheet. Analysis of results was done using SPSS software. **Results:** Overall, complications were seen in 7.5 percent of the patients. Pulmonary complications and cardiac complications were seen in 1.5 percent and 1 percent of the patients respectively. Reaction to spinal/lumbar puncture were seen in 3 percent of the patients. Overdose complications and epidural hematoma were seen in 1 percent and 0.5 percent of the patients respectively. **Conclusion:** Preparing a woman for emergency CS is a multidisciplinary task involving multiple steps and processes, including the timely assembly of staff. Good communication among obstetricians, midwives and anesthetists and early involvement of senior staff for high-risk cases will surely decrease the complications.
Key words: Anesthetic, Labor, Delivery, Complications

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INTRODUCTION

Anesthesia-related complications are the seventh leading cause of pregnancy-related mortality in the United States, accounting for 1.8% of all pregnancy-related deaths. Although there is still room for improvement, these figures represent a drastic reduction in the number of anesthesia-related deaths over the last few decades. As the overall maternal mortality has declined, maternal morbidity has become increasingly important. It has been recognized that maternal morbidity is a more appropriate and useful indicator of obstetric care quality than mortality. For example, investigators found that the incidence of serious complications of obstetric epidural analgesia did not change over a 17-yr study period. Additionally, it has been shown that the rate of pregnancy-related neurological complications has not changed substantially over the years.[1-3]

Anesthesia complications in the parturient can be divided into 2 categories: those related to airway manipulation and those related to neuraxial anesthesia. Physiologic changes of pregnancy can lead to challenging intubating conditions in a patient at risk of aspiration. Neuraxial techniques are used to provide analgesia for labor and anesthesia for surgical delivery. Therefore, complications associated with neuraxial techniques are often seen in this population. In the event of maternal cardiac arrest, modification to advanced cardiac life support algorithms must be made to accommodate the gravid uterus and to deliver the fetus if return of maternal circulation is not prompt.[4-6] Hence; under the light of above-mentioned data, the present study was undertaken for assessing anesthetic complications in Labor and delivery.

MATERIALS & METHODS

The present study was undertaken for assessing anesthetic complications in Labor and delivery. A total of 200 subjects were enrolled. Complete demographic and clinical details of all the subjects was recorded. A

Performa was made and detailed medical history of all the subjects was recorded separately. Only those subjects were enrolled which were pregnant and scheduled to undergo delivery within time duration of present study. Anesthesia was delivered in the Labor room and thorough observation of all the subjects was done to evaluate anesthesia related complications. All the results were recorded in Microsoft excel sheet. Analysis of results was done using SPSS software.

RESULTS

A total of 200 subjects were analyzed. Mean age of the subjects was 31.8 years. out of 200 subjects, 112 subjects were of Primigravida while the remaining were of Multigravida. 95 subjects were of rural residence while the remaining were of urban residence. Overall, complications were seen in 7.5 percent of the patients. Pulmonary complications and cardiac complications were seen in 1.5 percent and 1 percent of the patients respectively. Reaction to spinal/lumbar puncture were seen in 3 percent of the patients. Overdose complications and epidural hematoma were seen in 1 percent and 0.5 percent of the patients respectively.

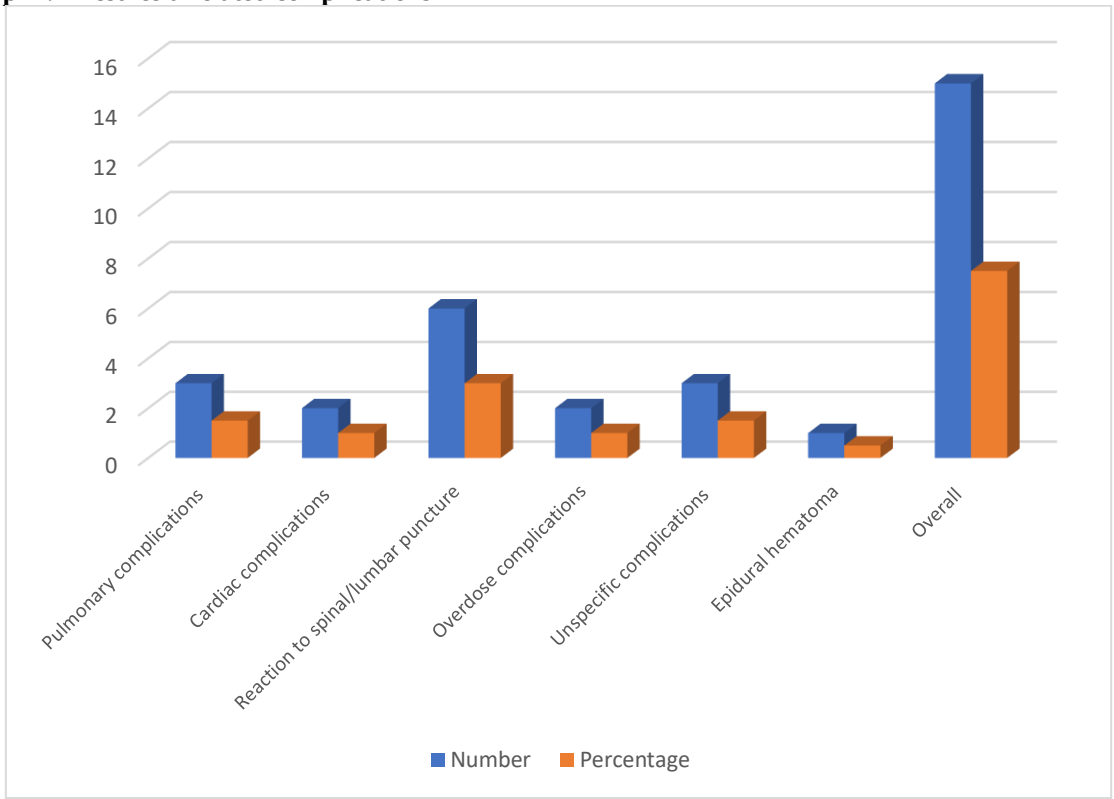
Table 1: Demographic data

Variable		Value
Mean age (years)		31.8
Gravida	Primi	112
	Multi	88
Residence	Rural	95
	Urban	105

Table 2: Anesthesia related complications

Complications	Number	Percentage
Pulmonary complications	3	1.5
Cardiac complications (Hypotension/Bradycardia)	2	1
Reaction to spinal/lumbar puncture	6	3
Overdose complications	2	1
Unspecific complications	3	1.5
Epidural hematoma	1	0.5
Overall	15	7.5

Graph1: Anesthesia related complications



DISCUSSION

Pregnancy is a state, which exhibits wide alteration of normal physiological parameters. In the background of these physiological changes, the pre-existence or development of co-morbidities during pregnancy can impact the obstetrical outcome. The presence of cardiac diseases, endocrinological disorders, respiratory diseases, renal pathologies, hepatic dysfunction, anemia, neurological and musculoskeletal disorders, connective tissue diseases and many others not only influence the obstetric outcome, but can significantly impact the anesthetic technique and pose numerous challenges to the attending anesthesiologists. Administration of anaesthesia during pregnancy has always been a challenge to the attending anaesthesiologists.[7- 9] Numerous diseases and their complications during pregnancy can cause hospitalization of a pregnant female, which may require surgical intervention. Surgical emergencies such as torsion of ovarian cysts, appendicitis, strangulated hernias, traumatic injuries, etc., during pregnancy warrant immediate treatment. The risk of surgery is not much different from the general population, but anaesthetic management is extremely challenging during this period. Safety of both the mother and the foetus in utero is the prime objective while delivering anaesthesia services during these emergency surgical procedures.[8- 10]Hence; under the light of above-mentioned data, the present study was undertaken for assessing anesthetic complications in Labor and delivery.

A total of 200 subjects were analyzed. Mean age of the subjects was 31.8 years. out of 200 subjects, 112 subjects were of Primigravida while the remaining were of Multigravida. 95 subjects were of rural residence while the remaining were of urban residence. Overall, complications were seen in 7.5 percent of the patients. In a similar study conducted by D'Angelo R et al, authors evaluated complications related to obstetric anesthesia. Thirty institutions participated in the approximately 5-yr study period. Data were collected as part of institutional quality assurance and sent to the central project coordinator quarterly.Data were captured on more than 257,000 anesthetics, including 5,000 general anesthetics for cesarean delivery. There were 157 total serious complications reported, 85 of which were anesthesia related. High neuraxial block, respiratory arrest in labor and delivery, and unrecognized spinal catheter were the most frequent complications encountered. A serious complication occurs in approximately 1:3,000 (1:2,443 to 1:3,782) obstetric anesthetics.The Serious Complication Repository Project establishes the incidence of serious complications in obstetric anesthesia. Because serious complications related to obstetric anesthesia are rare, there were too few complications in each category to identify risk factors associated with each.[10]

In the present study, pulmonary complications and cardiac complications were seen in 1.5 percent and 1 percent of the patients respectively. Reaction to spinal/lumbar puncture were seen in 3 percent of the patients. Overdose complications and epidural hematoma were seen in 1 percent and 0.5 percent of the patients respectively.Bloom SLet al, in a similar study, quantified anesthesia-related complications associated with cesarean delivery. A prospective observational study was conducted of women with singleton gestations undergoing cesarean delivery in the centers forming the National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Of the women studied, 34,615 (93%) received a regional anesthetic. Few (3.0%) regional procedures failed, and related maternal morbidity was rare. Increased maternal size, higher preoperative risk, rapid decision-to-incision interval, and placement later in labor were all significantly related to an increased risk of a failed regional procedure. Of the general anesthetics, 38% were administered when the decision-to-incision interval was less than 15 minutes. Women deemed at the greatest preoperative riskwere approximately 7-fold more likely to receive a general anesthetic. There was one maternal death, due to a failed intubation, in which the anesthetic procedure was directly implicated. Regional techniques have become the preferred method of anesthesia for cesarean delivery.[11]

CONCLUSION

Preparing a woman for emergency CS is a multidisciplinary task involving multiple steps and processes, including the timely assembly of staff. Good communication among obstetricians, midwives and anesthetists and early involvement of senior staff for high-risk cases will surely decrease the complications.

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