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ORIGINAL RESEARCH

Assessment of Trends of blood loss and blood transfusion during Cesarean section

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ABSTRACT:
Background: Operative delivery poses the risk of excessive blood loss and possible need for blood transfusion in the pregnant patient. Hence; the present study was undertaken for assessing the trends of blood loss and blood transfusion during Cesarean section. **Materials & methods:** A total of 50 female subjects were enrolled in the present study. Details including demography, previous pregnancy, delivery, blood loss, transfusion, and puerperal observations were recorded. Recorded blood loss was defined as low (≤500 ml), average (501-1000 ml) and excess (>1000 ml). The indication for BT was noted and no of BT required. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. **Results:** Out of 50 patients, 21 patients had blood loss of more than 1000 ml while 29 patients had blood loss of more than 1000 ml. Mean gestational age of subjects with blood loss of less than 1000 ml and more than 1000 ml was 33.6 weeks and 39.4 weeks respectively. While analysing and comparing the mean age, parity, mean gestational age and baby weight, significant results were obtained. **Conclusion:** Higher patient's age and higher gestational age were commonly associated with patients with higher blood loss.
Key words: Blood transfusion, Cesarean

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INTRODUCTION

Operative delivery poses the risk of excessive blood loss and possible need for blood transfusion in the pregnant patient. Factors predisposing to increased risk for blood transfusion identified from previous studies include preoperative anaemia, previous Caesarean section (CS) and antepartum haemorrhage among others. Various studies have shown that severe antepartum haemorrhage from causes such as placenta abnormalities can lead to anaemia and are significantly associated with blood loss with the attendant risk of blood transfusion during operative delivery.[1- 3]

Although the safety of CSs has improved, it is still associated with greater rates of maternal morbidity and mortality than vaginal delivery. CS delivery is associated with severe maternal morbidity, including obstetric hemorrhage, hysterectomy, anemia, blood transfusion, and infection. Among these operative morbidities associated with CS, obstetric hemorrhage is the leading cause of maternal mortality worldwide. Because of both the potential maternal risks and financial concerns, the increase in the cesarean rate is a serious public health problem.[4- 6] Hence; the present study was undertaken for assessing the trends of blood loss and blood transfusion during Cesarean section.

MATERIALS & METHODS

The present study was undertaken for assessing the trends of blood loss and blood transfusion during Cesarean section. A total of 50 female subjects were enrolled in the present study. Details including demography, previous pregnancy, delivery, blood loss, transfusion, and puerperal observations were recorded. The clinical records reviewed for various parameters such as age, parity, previous CS, gestation period, plurality, associated morbidity, nature of CS, and baby weight.

Table 1: Obstetric and clinical parameter comparison

Variable		Blood loss of less than 1000 ml (n=21)	Blood loss of more than 1000 ml (n=29)	p- value
Mean age (years)		23.9	37.4	0.00*
Parity	Nulli	12	10	0.01*
	Multi	9	19	
Mean gestation age (weeks)		33.6	39.4	0.03*
Anesthesia	Spinal	13	16	0.35
	General	8	13	
Baby weight (grams)		2625.3	3245.8	0.01*

*: Significant

Recorded blood loss was defined as low (≤500 ml), average (501-1000 ml) and excess (>1000 ml). The indication for BT was noted and no of BT required. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

Out of 50 patients, 21 patients had blood loss of more than 1000 ml while 29 patients had blood loss of more than 1000 ml. Mean age of the patients with blood loss of less than 1000 ml and more than 1000 ml was 23.9 years and 37.4 years respectively. Majority of the patients with blood loss of less than 1000 ml were of nulli parity while majority of the patients of blood loss of more than 1000 ml were of multi parity. Mean gestational age of subjects with blood loss of less than 1000 ml and more than 1000 ml was 33.6 weeks and 39.4 weeks respectively. While analysing and comparing the mean age, parity, mean gestational age and baby weight, significant results were obtained.

DISCUSSION

Reports have shown that each year a total 20 million cesarean sections (CS) are carried out worldwide, and over the last decades, rates of CS have increased speedily. In obstetric practice, CS is reported to be the most common indication of blood transfusion (BT) as it may lead to severe intraoperative loss of blood.[6- 8] Hence; the present study was undertaken for assessing the trends of blood loss and blood transfusion during Cesarean section.

In the present study, out of 50 patients, 21 patients had blood loss of more than 1000 ml while 29 patients had blood loss of more than 1000 ml. Mean age of the patients with blood loss of less than 1000 ml and more than 1000 ml was 23.9 years and 37.4 years respectively. Majority of the patients with blood loss of less than 1000 ml were of nulli parity while majority of the patients of blood loss of more than 1000 ml were of multi parity. R Imberti et al investigated transfusional practice over the last 12 years in 1618 women submitted to lower-segment cesarean section. The overall percentage of transfused patients was low (2.4%) and it has become lower in the last four years (1.1%), in concomitance with the development of better knowledge of tissue oxygenation and with the fear of transmitting infectious diseases, factors which have led anesthesiologists to employ blood only when strictly required. Three conditions greatly increased the risk of bleeding: placenta previa, abruptio placentae and coagulation disorders. Previous cesarean section, fetal distress, dystocias and hypertensive disorders of pregnancy did not increase the risk of bleeding and no difference was found between elective and non-elective surgery. Since for elective surgery two units of blood were crossmatched, the crossmatched/transfused ratio (C/T ratio) was very high (60.8/1).[10]

In the present study, Mean gestational age of subjects with blood loss of less than 1000 ml and more than 1000 ml was 33.6 weeks and 39.4 weeks respectively. While analysing and comparing the mean age, parity, mean gestational age and baby weight, significant results were obtained. Aksoy H et al compared the effect of general and spinal anesthesia on maternal blood loss in elective cesarean section (CS). Their study included 418 healthy pregnant women with a term uncomplicated singleton pregnancy between 37 and 41 weeks of gestation. The study participants were randomly divided into two groups: the general anesthesia group and spinal anesthesia group. The preoperative hemoglobin and hematocrit levels were similar in the both groups (p=0.08 and p=0.239, respectively). Significantly lower operative blood loss was achieved using spinal anesthesia versus general anesthesia during elective CS. The differences between preoperative and postoperative blood values for both the study groups were statistically significant (p<0.001). This study demonstrates that spinal anesthesia is associated with a lower risk of operative blood loss than general anesthesia in low risk patients undergoing elective CS.[11]

CONCLUSION

Higher patient's age and higher gestational age were commonly associated with patients with higher blood loss.

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