

# Evaluation of Practices of Blood Transfusion in Various Indication of Caesarean Section

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## Abstract

**Objective:** To determine frequency the blood transfusion among the patients undergoing caesarean section with various indications.

**Study Design:** Cross – sectional study.

**Place and Duration of Study:** The study was conducted from Oct 2008 to Apr 2009 in department of obstetrics and gynaecology Lady Willingdon Hospital Lahore.

**Subject and Methods:** Total 160 cases were selected in the study and frequency of intra operative blood transfusion was noted in patients undergoing caesarean section with each indication.

**Results:** Mean age of the patients was observed 31.9 ± 2.3 year. Distribution of cases by indication of blood transfusion in caesarean section showed placenta praevia in 90 patients (56.0%), pre-eclampsia in 12 patients (7.5%), previous caesarean section in 24 patients (15.0%) and obstructed labour in 34 patients (21.0%).

**Conclusion:** It is concluded from current study that main indication for blood transfusion is placenta praevia. Risk factors for placenta praevia which can be avoided are, endometrial damage, uterine scar, due to caesarean section or myomectomy. The second indication for blood transfusion is obstructed labour, which is a preventable condition.

**Key Words:** Blood Transfusion, caesarean section, indications.

## Introduction

Caesarean section is delivery of baby through abdominal route after 24 weeks of gestation. Caesarean section rates are rising in the United States and nearly 3 in 10 births are delivered by caesarean section in recent years (29.1%).<sup>1</sup> Khawaja et al<sup>2</sup> analyzed the data of Sir Ganga Ram Hospital, Lahore for 2001 and observed in that caesarean rate was 21.07%, A review of the literature reveals that caesarean section rate tertiary care hospitals of Pakistan ranges from 17.8% to 31.2%.<sup>3</sup>

The pregnant uterus has one of the greatest blood supply of any organ in the body. When uterus is surgically opened to perform caesarean section, a number of large blood vessels are cut. While the average blood loss for a vaginal birth is about 500cc, the average blood loss with caesarean section is almost double and may blood transfusion. An unbooked patient is six times more likely to receive a blood transfusion during caesarean section than women who had antenatal care. Likewise grandmultiparous women are associated with increased intra-operative transfusion during caesarean section.<sup>4</sup>

Review of the available literature shows that need for transfusion varies in various countries. In Thailand,

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2.2% patients undergoing caesarean sections needed blood transfusion,<sup>5</sup> while in Canada 5.7% patients,<sup>6</sup> in Nigeria 8.9% patients<sup>7</sup> needed blood transfusion. In Pakistan, few studies has been conducted on this topic. The only detailed study is from Aga Khan University, where 126 patients undergoing caesarean section studied. Among them, 15% patients were transfused.<sup>8</sup>

In a study conducted in University of Nigeria teaching hospital shows a transfusion rate of 25.2%. There are various indications for transfusion, the most common among them are placenta praevia, pre-eclampsia, previous caesarean section, obstructed labour, malpresentations and fetal distress. The rate of blood transfusion for various indications is as follows:

Placenta praevia 59.1%, severe pre-eclampsia 11.1%, previous caesarean section 17%, obstructed labour 28%. The indications for caesarean section, pre-operative anaemia and quantity of blood loss during caesarean section were significant risk factors for blood transfusion.<sup>9</sup>

The rational of my study is to find out frequency of blood transfusion for various indications so that patients on a high risk of developing these indications can be identified earlier and efforts can be made to minimize the need of blood transfusion by educating them about the importance of regular antenatal care.

## Results

According to distribution of cases by age, 20 patients (12.5%) were 20 – 25 year, 60 patients (37.5%) were between 26 – 30 year, 70 patients (43.8%) between 31 – 35 year while 10 patients (6.2%) were 36 – 40 years old with mean age of 31.9 + 2.3 year (Table 1).

Out of 160 patients, 40 (25.0%) were booked and 120 patients (75.0%) were unbooked (Table 2).

Distributions of cases by mode of admission showed 108 cases (67.5%) admitted through emergency and 52 patients (32.5%) through outpatient department (Table 3).

Distribution of parity showed, 14 (8.7%) primigravida, 36 patients (22.5%) were para 1 – 2, 34 patients (21.3%) were para 3 – 4 and 76 patients (47.5%) were para 5 – 7 (Table 4).

Out of 160 patients, 68 patients (42.5%) had gestational age 34 – 35 weeks while 92 patients (57.5%) had gestational age 36 – 38 weeks (Table 5).

Table – 6 depicts socioeconomic status, 126 patients (78.8%) belonged to lower class (< Rs.5000) and 34 patients (21.2%) were of middle class (Rs.5000 –

100000). Ten patients (6.2%) had previous abortion (Table 7).

Distribution of cases by indication of blood transfusion in caesarean section showed placenta praevia in 90 patients (7.5), previous caesarean section in 24 patients (15.0%) and obstructed labour in 34 patients (21.0%) (Table 8).

## Discussion

Caesarean section is the delivery of baby through abdominal route after 24 weeks of gestation. The caesarean section rate in tertiary care hospital of Pakistan ranges from 17.8% to 31.2%.

The average blood loss during caesarean is twice that much when compared with vaginal birth i.e 500cc, necessitating the need for blood transfusion.

Transfusion rate varies among different countries. In Pakistan at Aga Khan University the blood transfusion rate was 13%. Whereas in Nigeria University, 25.2% patients were transfused. The indications for the caesarean section and quantity of blood loss during caesarean section were significant risk factors for blood transfusion. Efforts should be made to reduce the blood transfusion without increasing maternal morbidity and mortality.

The most common indication for blood transfusion in current study is placenta praevia i.e 56%. These results were comparable with a study done in University of Nigeria teaching hospital in which most frequent indication for blood transfusion was placenta praevia (59%).

Gestational age at delivery and type of surgery required are predictors of transfusion during caesarean for placenta praevia. Article ballon occlusion does not appear to increase transfusion risk and may be considered as one of the techniques in management.

Risk factors for blood transfusion in women with placenta praevia are advanced maternal age, repeat dilatation and curettage, and complete placenta praevia women with placenta praevia who are at risk for blood transfusion should be carefully managed with sufficient preparation for blood transfusion.

Severe haemorrhage requiring blood transfusion can be predicted in majority of patients, on the basis of antenatal risk factors, while the remaining require vigilant monitoring for risk factors during labour and delivery.

Second most common indication for blood transfusion in current study is obstructed labour i.e 21.2%

which is comparable to results of study done in Nigeria University i.e 28%. The most common cause for obstructed labour is cephalo – pelvic disproportion (49.3%) followed by mal-presentation and mal-position (43.3%). Obstructed labour still poses great maternal and fetal risk in our setup. Most of these causes are preventable by properly trained staff.

Improving the access to and promoting the use of reproductive and contraceptive services will help reduce the prevalence of this complication.

Third most common indication for blood transfusion is previous caesarean i.e 15% comparable to study conducted in Nigeria where transfusion rate for this indication was 17%. In a study conducted at University of California showed that previous caesarean section patients without trial of labor required more blood transfusion, intensive care unit admission and hospital readmissions than women with previous vaginal delivery.

The forth indication for blood transfusion in my study was pre-eclampsia i.e 7.5% which is to some extent comparable to study conducted in Nigeria university which was 11.1%.

The main indications for transfusion were placental disorders like placenta praevia and antepartum haemorrhage and pre-eclampsia were predictable indications for major blood loss and transfusion while transfusion rate is negligible in patients presented with fetal distress, cephalo – pelvic disproportion.

In a study conducted in Australia showed risk of blood transfusion for emergency and elective caesarean were 9.8 / 1000 and 3.9 / 1000. In my study, the risk was high in patients undergoing emergency lower segment caesarean section i.e 67%.

An unbooked patient is six time more likely to receive blood transfusion during caesarean section than women who have regular antenatal care ( $p < 0.001$ ). In my study 755 patients were unbooked and only 25% were booked.

Grandmultiparous women were associated with intra-operative transfusion were grandmultiparous i.e 47%.

So that patients on a higher risk of developing these indications can be identified earlier and efforts can be made to minimize need off blood transfusion by educating them about the importance of regular antenatal care.

## Conclusion

It is concluded in current study that main indication for blood transfusion is placenta praevia. Risk factors for placenta praevia which can be avoided are, endometrial damage at the time of dilatation and curettage, uterine scar which is in form of caesarean section and myomectomy. The risk increases with increasing number of caesarean section. Therefore, decision for section should be done by senior person and on the definite indication, so the need for blood transfusion should be minimize due to this indication.

The second indication for blood transfusion is obstructed labour. It is the result of negligence and is a preventable condition.

It can be done by creating the awareness at basic health level and ensuring the early referral to tertiary care center.

## References

1. Menacker F, Declercq E, Macdorman MF. Caesarean delivery: background, trends, and epidemiology. *Semin perinatol* 2006; 30: 235-41.
2. Khawaja NP, Yousaf T, Tayyeb R. Analysis of caesarean delivery at a tertiary care hospital in Pakistan. *J Obstet gynaecol* 2004; 24: 139-41.
3. Bilal N, Yasmin F, Akhtar S. Frequency and indication of caesarean section in a tertiary care maternity unit. *J Postgrad Med Inst* 2005; 9: 392-5.
4. Imarengiaye CO, And AB. Risk factors for blood transfusion during C – section in a tertiary hospital Nigeria. *Med Sci Monit* 2006; 12: CR269-72.
5. Wuttikonsammakit p, Sukcharoen N, pregnancy outcomes of multiple repeated caesarean section in king Chulalongkorn Memorial Hospital. *J Med Assoc Thai* 2006; 89: S81-6.
6. Aubrey Bassler K, Newbery S, Kelly L, Weaver B, Wilson S. Maternal outcomes of caesarean sections: do generalists' patients have different outcomes than specialists' patients? *Can Fam Physician* 2007; 53: 2132-4.
7. Faponle AF, makinde ON. Caesarean section: intra-operative blood loss and its restitution. *East Afr med J* 2007; 84: 31-4.
8. Khan FA, khan M, Ali A, Chohan U. Estimation of blood loss during Caesarean section : an audit. *J Pak Med Assoc* 2006; 56: 572-5.
9. Ozumba BC, Ezegwui HU. Blood transfusion and caesarean section in a developing country. *J Obstet Gynaecol* 2006; 26: 746-8.
10. Price J. The abuse of caesarean section. *Am J Obstet Dis Women Child* 1888; 21: 1193-6.
11. Reynolds E. Primary operations for obstetrical debility. *Surg Obstet Gynaecol* 1907; 4: 306-18.

12. Williams JW. A criticism of certain tendencies in America Obstetries NY. State J Med 1922; 4: 306-18.
13. Davis EP. Elective caesarean section. Trans Am gynaecol Soc 1919; 44: 249-63.
14. Williams JW. The abuse of caesarean section. Surg gynaecol Obstet 1917; 25: 194-201.
15. Williams JW. A critical analysis of twenty – one year's experience with caesarean section. John Whitridge Williams (1866 – 1931). Obstet gynaecol survey 2004; 59: 311-8.