

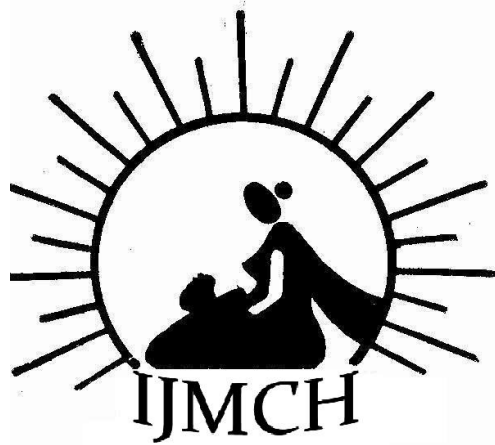
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What are the conditions that predispose to and worsen obstetrical hemorrhage?

Predisposing and Worsening factors of Obstetrical Hemorrhage

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ABSTRACT

Research question:

What are the conditions that predispose to and worsen obstetrical hemorrhage?

Methods and Settings:

The present study is a prospective study and includes all patients who were admitted to the labor ward, Department of Obstetrics and Gynecology, Karnataka Institute of Medical Sciences Hospital, Hubli, Karnataka, who had obstetrical hemorrhage, during the period from 1/4/2003 to 31/3/2004

Results:

A total of 5704 women were admitted to the labor ward at KIMS. Of these patients 102 had obstetrical hemorrhage, 75.4% were unbooked. 46% were in the age group between 21-25 years and 76.47% were multigravida. Placenta previa (20.59%), Abruptio placentae (28.43%), Adherent placenta (10.78%), Ectopic pregnancy (10.78%), Vesicular mole (0.98%), Traumatic bleeding (3.92%), Ruptured uterus (13.73%), Atonic PPH (4.9%), Inversion of the uterus (0.98%), Abortion (3.92%) and Hepatitis (0.98%) predisposed to obstetrical hemorrhage. Preeclampsia (6.86%), Anemia (46.17%), Hepatitis (0.98%) and adhesions due to prior surgery (0.98%) worsened the hemorrhage. 70.58% required one pint of blood, 24.5% required two pints of blood and 4.9% required more than two pints of blood. There were four deaths in the study period

Key Words: *Obstetric hemorrhage, blood transfusion.*

INTRODUCTION

Even though the maternal mortality has been reduced dramatically by hospitalization for delivery and the availability of blood and blood products, hemorrhage still remains a major cause of death in the majority of the mortality reports in developed and developing countries.⁽¹⁾ Patients who do survive obstetrical hemorrhage suffer from severe morbidity in spite of active management. However, death due to obstetrical hemorrhage is preventable. Most of the conditions predisposing to or worsening obstetrical hemorrhage can be identified during the antenatal period. The present study is to assess the conditions predisposing to and worsening obstetrical hemorrhage of the patients attending the Department of Obstetrics and Gynecology of KIMS, Hubli, Karnataka during the period 1/4/2003 to 31/3/2004

MATERIALS AND METHODS

The present study is a prospective study and includes all patients who were admitted to the labor ward, Department of obstetrics and gynecology, Karnataka Institute of medical sciences Hospital, Hubli, Karnataka, who had obstetrical hemorrhage, during the period from 1/4/2003 to 31/3/2004

Inclusion criterion: Only those pregnant women who had vaginal or internal bleeding and who required blood transfusion.

Exclusion criterion: Women who were not transfused with blood/ blood components.

All the cases were studied with respect to age, parity, booked/ unbooked status, details of the present and previous obstetric history, general and obstetric examination findings, routine and specific investigations, number of pints of blood required, medical and/or surgical management of the cases and their postpartum/ postoperative outcome.

RESULTS

A total of 5704 women were admitted to the labor ward at KIMS during the period 1/4/03 to 31/3/04. Of these patients 102 patients had obstetrical hemorrhage. 75.4% (77/102) of these patients were unbooked. 46% (47/102) of the cases were in the age group between 21-25 years. 76.47% (78/102) were multigravida.

Of the four cases of traumatic bleeding, 3 cases were due to vaginal lacerations and one was due to forceps application. Of the five cases of atonic PPH, one case had hepatitis, one case had prolonged labor and five cases had pre existing anemia.

Four patients required hysterectomy, the indications being, placenta previa, abruptio placentae, adherent placenta and ruptured uterus.

Table I: Predisposing factors of obstetric hemorrhage

FACTORS	NO. OF CASES	%
Placenta Previa	21	20.59
Abruptio Placentae	29	28.43
Adherent placentae	11	10.78
Ectopic Pregnancy	11	10.78
Vesicular Mole	1	0.98
Traumatic Bleeding	4	3.92
Ruptured Uterus	14	13.73
Atonic PPH	5	4.90
Inversion of Uterus	1	0.98
Abortion	4	3.92
Hepatitis	1	0.98
Total	102	100

Table II: Factors worsening obstetric hemorrhage

FACTORS	NO. OF CASES	%
PIH	7	6.86
Anemia	42	46.17
Hepatitis	1	0.98
Omental Adhesions	1	0.98

Table III: Requirement of blood transfusion

CONDITIONS	NO. OF PINTS OF BLOOD TRANSFUSED				
	1	2	3	4	>4
Placenta Previa	15	5	-	-	1
Abruptio Placentae	22	5	2	-	-
Adherent Placenta	8	2	1	-	-
Ectopic pregnancy	4	6	-	1	-
Vesicular Mole	1	-	-	-	-
Traumatic Bleeding	3	1	-	-	-
Ruptured uterus	13	1	-	-	-
Atonic PPH	2	3	-	-	-
Inversion of uterus	1	-	-	-	-
Abortion	3	1	-	-	-
Hepatitis	-	1	-	-	-
Total	72	25	3	1	1
%	70.58	24.5	2.94	0.98	0.98

Table IV: Maternal mortality due to obstetric hemorrhage

CONDITIONS	DEATHS
Placenta Previa	1
Traumatic bleeding	1
Atonic PPH	1
Hepatitis	1

Table V: Predisposing and worsening factors for Placenta previa

PREDISPOSING	FACTORS	NO. OF CASES	%
	Multiparity	17	80.95%
	Preterm	17	80.95%
	Previous LSCS	4	19.04%
	Uterine Anomaly	1	0.98%
WORSENING	Pre eclampsia	4	19.04%
	Anemia	11	52.38%

Table VI: Predisposing and worsening factors for Abruptio placentae

PREDISPOSING	FACTORS	NO. OF CASES	%
	Multiparity	25	86.2
	Preterm	10	34.48
	Previous Abruptio	1	3
	Uterine Anomaly	1	3
WORSENING	Pre eclampsia	10	34.48
	Anemia	16	55.17

Table VII: Predisposing and worsening factors for Adherent placenta

PREDISPOSING	FACTORS	NO. OF CASES	%
	Multiparity	6	54.5
	Previous LSCS	2	18.18
	Placenta previa	1	8.33
WORSENING	Anemia	1	9.09

Table VIII: Predisposing factors for Ectopic pregnancy

FACTORS	No of cases	%
Infertility	2	18.18
Tubectomy	1	9.09
Previous LSCS	1	9.09
Uterine Anomaly	2	18.18

Table IX: Predisposing and worsening factors for Ruptured Uterus

PREDISPOSING	FACTORS	NO. OF CASES	%
	CPD	3	21.43
	Multiparity	12	85.7
	Malpresentations	1	7.14
	Oxytocin	2	14.28
	Obstetric manipulations	1	0.07
	Prior LSCS	10	71.41
WORSENING	Anemia	5	35.71
	Omental Adhesions	1	0.07

DISCUSSION

The present study includes 102 patients admitted to the labor ward of the KIMS Hospital, Hubli between 1/04/03 and 31/03/04 with the clinical features of obstetrical hemorrhage.

Bleeding in early pregnancy due to ectopic pregnancy, vesicular mole and abortions comprised of 15.68% of all the cases. Late pregnancy bleeding comprised of 62.75% of all the cases. Third stage bleeding which was caused by adherent placenta, atonic PPH, inversion of the uterus and traumatic bleeding during delivery constituted 20.58% of the cases. Pawar et al showed an early pregnancy bleeding of 18%, late pregnancy bleeding of 66% and a third trimester bleeding of 16%, which are comparable to this study.⁽²⁾

Preeclampsia, anemia, hepatitis and previous surgery worsened the obstetric hemorrhage

The commonest cause of antepartum hemorrhage was abruption placentae (28.43%) followed by placenta previa (20.59%). Ruptured uterus was seen in 13.73% of the cases. The commonest cause of bleeding in early pregnancy was ectopic gestation (10.78%).

Most of the cases (70%) required one pint of blood. The amount of blood transfused may not reflect the actual requirement. Many centers do not have adequate blood or blood

components and ignorance regarding blood donations results in a challenging situation for the treating doctor. Retrospective analyses of the clinical scenarios often criticize the employment of blood transfusion as 'too little, too late'. Women at high risk of losing greater than 1000 ml should be strongly advised to deliver in a setting where blood transfusion and intensive care facilities are available.⁽³⁾ 5 of the 11 cases of ectopic pregnancy underwent auto-transfusion. Where facilities are available, intraoperative cell salvage can be done. Intraoperative cell salvage (IOCS) is the process by which blood shed within the surgical field is retrieved by an anticoagulated suction apparatus and collected within a reservoir from where it is centrifuged, washed and pumped into an infusion bag. This salvaged blood can then be returned to the patient.⁽³⁾ Multiparity, preterm delivery, prior cesarean and uterine anomaly were predisposing factors to placenta previa. Multiparity, preterm delivery, prior abruption and uterine anomaly were predisposing factors to abruptio placentae. Both placenta previa and abruptio placentae were worsened by underlying anemia and preeclampsia. Yang Q et al studied that there was a strong association of maternal age, race, parity, and previous cesarean section with placenta previa.⁽⁴⁾ Williams *et al* reported an association of placenta previa with smoking cigarettes.⁽⁵⁾ Butler et al observed an association of raised MSAFP with placenta previa.⁽⁶⁾ Hossain *et al* studied that 54% of the cases of abruption were multiparas, and the mean gestational age for presentation was 34+/-4.21 weeks.⁽⁷⁾ Other studies have shown that placental abruption is associated with chronic hypertension, premature rupture of membranes, multifetal pregnancy, hydramnios, trauma, cocaine abuse and cigarette smoking.⁽⁸⁾ Multiparity, prior cesarean and placenta previa were predisposing factors to adherent placenta in the present study while underlying anemia worsened it. Sofia *et al* studied that morbidly adherent placenta was associated with a maternal age more than 35 years, high parity(4.5), prior cesarean deliveries (25%), placenta previa (35%) and previous curettages(25%).⁽⁹⁾ Ectopic was associated with infertility, tubectomy, prior cesarean and uterine anomaly. Mahji *et al* identified risk factors in 65% of the patients who had ectopic gestation. Tubectomy (14.4%), history of an abortion (26.1%), infertility (12.2%), pelvic inflammatory disease (12.8%) and a history of previous surgery (11.1%) were important factors.⁽¹⁰⁾ Ruptured uterus was associated with cephalo-pelvic disproportions, multiparity, malpresentations, use of oxytocin, obstetric manipulations and prior cesarean sections. It was worsened by underlying anemia and adhesions from a prior surgery. Guyot *et al* studied that compared to women who delivered vaginally in their first birth, women who underwent a cesarean delivery were, during their second delivery, at a high risk of uterine rupture. Induction of labor, high birth weight (> or =to 4000gms), post term (>or=42 weeks), high maternal age (>or =35 years) and short maternal stature were associated with uterine rupture.⁽¹¹⁾ Four deaths occurred in the study period. In a confidential enquiry into maternal deaths, it was observed that 80% of the cases of obstetrical hemorrhage were due to substandard care.⁽¹²⁾ Other studies have shown that a lack of adequate obstetric and anesthetic services lead to exanguination of the patient.⁽³⁾ Identifying risk factors for obstetric hemorrhage and taking adequate precautions to manage the hemorrhage can reduce the morbidity and mortality occurring from this obstetric catastrophe. The patients should be explained about their condition and requirement of blood and blood products. Timely referral of such patients is essential.

CONCLUSION

Obstetric hemorrhage is a devastating disease. Identifying the predisposing and worsening factors of obstetric hemorrhage can minimize the morbidity and mortality occurring from them.

REFERENCES

1. Chichakali LO, Atrash HK, Mackay AP, Musani AS, Berg BJ. Pregnancy –related mortality in the United States due to hemorrhage:1979-1992. *Obstet Gynecol* 1999;94:721.
2. Pawar *et al.* Maternal Morbidity due to massive Obstetric haemorrhage. *J of Obstet gynecol of India* 1996;18-22.
3. Royal College of Obstetricians and Gynecologists. Prevention and Management of Postpartum Haemorrhage. RCOG Green-top Guideline No. 52. London: Royal College of Obstetricians and Gynecologists ;2009.
4. [Yang Q](#), [Wen SW](#), [Phillips K](#), [Oppenheimer L](#), [Black D](#), [Walker MC](#). Comparison of Maternal risk factors between placental abruption and placenta previa. [Am J Perinatol](#) 2009;26(4):279-86.
5. Williams MA, Matador R, Libermen E, et al: Cigarette Smoking during pregnancy in relation to placenta previa. *Am J Obstet Gynecol* 1991;165:28.
6. Butler EL, Dashe JS, Ramus RM. Association between maternal serum alpha fetoprotein and adverse outcomes in pregnancies with placenta previa. *Obstet Gynecol* 2001;97:35.
7. [Hossain N](#), [Khan N](#), [Sultana SS](#), [Khan N](#). Abruptio placenta and adverse pregnancy outcome. [J Pak Med Assoc](#) 2010;60(6):443-6.
8. Cunningham FG, Lenovo KJ, Bloom SL, Hauth JC, Rouse DJ, Song CY: Obstetrical Hemorrhage. In: Williams Obstetrics, 23rd ed. New York. McGraw-Hill,2010;p764
9. S Sofiah, M Med, Late Y C Fung. Placenta Accreta: Clinical Risk Factors, Accuracy of Antenatal Diagnosis and Effect on Pregnancy Outcome. *Med J Malaysia* 2009;64(4).
10. [Majhi AK](#), [Roy N](#), [Karmakar KS](#), [Banerjee PK](#). Ectopic pregnancy--an analysis of 180 cases. [J Indian Med Assoc](#) 2007;105(6):308-12.
11. Guyot A, Carbonnel M, Frey C, Pharisien I, Uzan M, Carbillon L. Uterine rupture: risk factors, maternal and perinatal complications. *J Gynecol obstet Biol Reprod (Paris)* 2010;39(3):238-45.
12. Lewis G, editor. Why mothers Die 2000–2002, The Sixth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. London: RCOG Press; 2004.