“MATERNAL AND PERINATAL OUTCOME IN ANTEPARTUM HAEMORRHAGE AT KAHER, BELAGAVI -ONE YEAR HOSPITAL BASED OBSERVATIONAL STUDY”

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This is to certify that the dissertation entitled "**MATERNAL AND PERINATAL OUTCOME IN ANTEPARTUM HAEMORRHAGE AT KAHER, BELAGAVI- ONE YEAR HOSPITAL BASED OBSERVATIONAL STUDY**" is a bonafide research work done by **Reg. No.**BJ0116003,

Dr. M.B Bellad MD, FICOG
Professor & Head
Department of Obstetrics,
And Gynecology
J.N. Medical College
Nehru Nagar,
Belagavi- 590010

Dr. (Mrs.) Niranjana. S. Mahantshetti MD
Principal
J.N. Medical College
Nehru Nagar,
Belagavi- 590010

Date:
Place: Belagavi

Date:
Place: Belagavi

ABSTRACT

Title: Maternal and perinatal outcome in antepartum hemorrhage -one year hospital based observational study

I**ntroduction:** Antepartum hemorrhage is a grave obstetric emergency contributing to a major amount of perinatal and maternal morbidity and mortality

Objective: To study maternal and perinatal outcomes in antepartum hemorrhage.

Methods: It was a observational study carried out from January 2017 to December 2017. All antenatal cases getting admitted in KAHER with a diagnosis for antepartum hemorrhage were included. Complete details of the maternal and the neonatal outcome using the proforma were collected for the analysis

Results: The total numbers of cases with antepartum haemorrhage were 131. Incidence of antepartum hemorrhage was 2.4% . The total numbers of cases with placenta previa were 59 and with abruption placenta were 70. There was 1 case with antepartum hemorrhage of unknown origin and one case with a cervical polyp

The incidence of placenta previa in the current study was 1.09%. 74.6% were multigravida and 25.4% were primigravidas. The most common gestational age in the present study to be diagnosed as placenta previa was between 33-37 weeks. Maximum patients were with type 4 and type 3 of placenta previa according to F.J. Browne's classification. Most common mode of presentation was painless vaginal bleeding seen in 49.2% of the patients and 18.6% patients presented with vaginal bleeding with preterm labor. The most common risk factors with placenta previa were anemia, fetal growth restriction and history of previous LSCS. 3 patients underwent peripartum hysterectomies. 31 babies i.e. 52.5% needed NICU admission.

57.1% cases were multigravidas and 42.9% were primigravidas.

38.6% cases with abruptio placenta were registered in our hospital and 61.4% were registered outside. Maximum patients with abruption placenta were in the age group of 21 – 30 years i.e. 71.4%. 17.2% were above the age of 30 years and 11.4% were less than 20 years of age. 80% cases with abruption placenta presented with gestational age between 33- 37 weeks. revealed type (71.4%) of the abruption had the highest incidence followed by concealed type (24.2%) and mixed type (4.4%). 35 patients presented to the hospital with severe pain in abdomen associated with vaginal bleeding. The most common associated factor was pre eclampsia. 24 patients had couvelaire uterus. Peripartum hysterectomy was done for 2 patients

Conclusion: The commonest cause of antepartum hemorrhage was placental abruption followed by placenta previa. The commonest mode of delivery was cesarean section. The present study indicates that uncorrected anemia is still common and contributing to increased maternal mortality and also necessitating high requirement of blood transfusion. Pre eclampsia and previous LSCS were the major etiological factors contributing to antepartum hemorrhage

ABBREVIATIONS

APH	-	Antepartum Haemorrhage
PP	-	Placenta previa
AP	-	Abrutpio placenta
LSCS	-	Lower segment cesarean section
PCV	-	Packed cell volume
RDP	-	Random donor platlet
FFP	-	fresh frozen plasma
WHO	-	World health Organization

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INTRODUCTION

Obstetric hemorrhage is a major cause of maternal death in low resource countries [(1)] and it includes both antepartum and postpartum hemorrhage.

Antepartum hemorrhage is defined as any bleeding from or into the genital tract during the pregnancy, after the period of viability until the delivery of the fetus.

The main causes of antepartum hemorrhage include abruptio placentae and placenta previa. Others are: vasa previa, cervical polyp, cervical and vaginal neoplasms and antepartum hemorrhage of unknown origin (3).

ABRUPTIO PLACENTA

Abruptio placentae is defined as premature separation of the placenta—either partially or totally— from a normally implanted placenta before the delivery of the fetus.[(3)]

HISTORICAL ASPECTS:

The term abruption in Latin means, “breaking away” which describes the process by which the placental attachment to the uterus is disrupted by hemorrhage.

In 1609 Louis Bourgeois identified the premature separation of placenta. DeLee and Coole in1848 discovered the term ABRUPTIO PLACENTAE to denote sudden forcible separation of placenta from its normal site. In 1775, Edward Rigby denoted first clinical difference between abruptio placentae and placenta previa. He called abruptio placenta as accidental hemorrhage. [(5)]

CLASSIFICATION

There are multiple classifications based on different criteria.

a. Based on whether external bleeding is present or not.

1. Revealed – bleeding is completely external.

2. Concealed – When the blood is retained inside the uterine cavity and not visible externally.

3. Mixed – partly revealed and partly concealed.

b. PAGE'S Classification (1954)[6]

1. Grade 0 – Clinically unrecognized before delivery and diagnosis is solely based on examination of placenta.

2. Grade 1 – External bleeding is present or mild uterine tetany but no evidence of maternal shock.

3. Grade 2 – there is uterine tetany, usually uterine tenderness is present, possibly with external bleeding, fetal distress /death but no evidence of maternal shock.

4. Grade 3 – There is maternal shock or coagulation defect with uterine tetany and intrauterine demise.

c. Geoffrey Sher (1978) proposed following clinical grading system

Grade 1 – Corresponds to those cases in which diagnosis of abruption placenta is made retrospectively. Most of the retro placental clot volume was about 150 ml. Fetuses are not at risk and has a favorable perinatal outcome.

Grade 2 – Includes classical features of antepartum hemorrhage and fetus is live. Retro placental clot volume 150 – 500 ml.

Grade 3 – Grade 2 + fetal demise and is further divided based on absence or presence of coagulopathy.[7]

d. Burnet Lunen's Classification

1. Mild – Retro placental clots measuring < 30 ml.
2. Moderately severe – Retro placental clot measures between 30 – 150 ml.
3. Severe – Retro placental clot measures more than 150ml.[7]

Etiopathogenesis

Placental abruption is initiated by hemorrhage into the decidua basalis. The decidua then splits, leaving a thin layer adhered to the myometrium. Consequently, the process begins as a decidual hematoma and expands to cause separation and compression of the adjacent placenta.

Pre disposing factors:

The factors which can be responsible fir abruption placenta are as follow-

1) Hypertensive disorders : gestational hypertension, preeclampsia, chronic hypertension are found to be the most frequent condition associated with placental abruption
2) Preterm Prematurely Ruptured Membranes.
3) Cigarette Smoking.

4) Cocaine Abuse.
5) Uterine Leiomyomas
6) Previous history of abruption
7) Previous LSCS

CLINICAL PRESENTATION [3]:

The clinical presentation varies from patient to patient. Vaginal bleeding, pain abdomen, uterine tenderness and sudden loss of fetal movements are considered to be the classical symptoms.

Clinical signs of abruption are tense, tender uterus, signs of shock which are out of proportion with the estimated blood loss (concealed abruption), frequent uterine contractions on tocograpgh with or without associated fetal heart rate abnormalities on the cardiotocography traces.

Importantly, the signs and symptoms of placental abruption can vary considerably. In some women, external bleeding can be profuse, yet placental separation may not be so extensive as to compromise the fetus.

In others, there may be no external bleeding, but the placenta is sufficiently sheared off that the fetus is dead—a concealed abruption

The diagnosis of placental abruptions is clinical based on these main characteristic signs and symptom, which is confirmed by the evaluation of placenta after delivery. On gross examination of the placenta, it reveals a clot or a depression in the maternal surface.

There is a serious risk of development of coagulopathy in the mother due to consumption of clotting factors. In severe abruptions, complications include large haemorrhage requiring transfusion, disseminated intravascular coagulopathy, infection and rarely maternal death.

Abruption placenta is associated with high rate of perinatal mortality and morbidity as premature separation of placenta leads to fetal hypoxia.

The majority of fetal morbidity is due to prematurity.

Low birth weight, fetal growth restriction, neonatal anemia and hyperbilirubinemia are significantly more common. In cases presenting with the fetus still alive. Fetal heat rate abnormalities are common.

MANAGEMENT:

Treatment of the woman with a placental abruption varies depending primarily on her clinical condition, the gestational age, and the amount of associated hemorrhage. With a living viable-size fetus and with vaginal delivery not imminent, emer- gency cesarean delivery is chosen.

If the fetus has died or if it is not considered mature enough to live outside the uterus, then vaginal delivery is preferable. In either case, prompt and intensive resuscitation with blood and crystalloid is warranted to replace blood lost from retroplacental and external hemorrhage.. If the diagnosis of abruption is uncertain and the fetus is alive and without evidence of compromise, then close observation should be provided that imme- diate intervention is available.

COMPLICATIONS

1. Hypovolemic shock
2. Acute renal failure
3. Disseminated Intravascular Coagulation
4. Postpartum Hemorrhage
5. Hypertension
6. Utero placental apoplexy
7. Feto - maternal hemorrhage
8. Fetal distress and death
9. Sheehan's syndrome
10. Maternal death

The maternal complications primarily depend on the severity of abruption. In cases of abruption severe enough to cause death of the fetus DIC sets in. DIC may be a forerunner of acute renal failure.

PLACENTA PREVIA

Placenta that is implanted partially or completely over the lower uterine segment (over and adjacent to the internal os) is called placenta previa. [8]

HISTORICAL ASPECTS:

Schacher[9] in 1709 first demonstrated the exact relationship of placenta to the cervix in a case of placenta previa in an autopsy on a dead body. But Portal[10] correctly described the condition in 1983. Rigby[11] in 18th century, first distinguished

between types of APH i.e., vaginal bleeding with normal and abnormal placentation. He demonstrated the importance in observation, that the bleeding was inevitable and will recur in patients with placenta previa till delivery.

Ian Donald first demonstrated placenta previa and its diagnosis by USG (1958), a critical milestone in obstetrics. The risk factors include multiparity, increased maternal age (> 35 years), history of previous cesarean section or any other scar in the uterus (myomectomy or hysterectomy), smoking — (as it causes placental hypertrophy to compensate carbon monoxide induced hypoxemia) and prior curettage.[8]

CLASSIFICATIONS:

1) FJ Browne Classification[9]

I-Degree: The placenta dips into the lower uterine segment by its lower margin and the greater part of it being in the upper uterine segment

II-Degree: The edge of the placenta reaches the internal os

III-Degree. : The placenta overlaps the internal os when closed but it does not cover it entirely when fully dilated

IV-Degree. : The placenta is low in its attachment that its center roughly corresponds to the internal os when fully dilated.

2) William's Classification [13]

1. Total placenta previa: The internal cervical os is covered completely by the placenta.
2. Partial placenta previa: The internal os is partially covered by the placenta.
3. Marginal placenta previa: The edge of the placenta is at the margin of the internal os.
4. Low lying placenta: The placenta is implanted in the lower uterine segment such that the placental edge actually does not reach the internal os but is in close proximity to it.

3) Newmann White (1929) Classification [9]

1. Central: Wherein the placenta covers the entire internal os.
2. Marginal: Where the placenta reaches up to the margin of the internal os.
3. Lateral: Where the placenta dips into the lower uterine segment.

4) Jauniaux and Campbell's Classification [14]

Type-I: Low lying placenta positioned close to the os (within 5 cms).

Type-II: Marginal placenta previa located at the margin of the os.

Type-III: Partial placenta previa partially covering the os.

Type-IV: Total placenta previa completely covering the os.

5) Dewhurst's Classification [15]

Grade-I :Placenta extends to the lower segment

Grade-II :Placenta extends to os

Grade-III :Placenta covers os eccentrically

Grade-IV :Placenta covers os centrally

6) According to RCOG Green Top Guidelines 27 [16]

1. A major praevia describes a placenta that overlaps or covers the internal os
2. A minor praevia exists when the placenta reaches the internal os

7) According to distance from os

1. Major: when the placenta lies <2 cm from the os

2. Minor: when the placenta lies >2 cm from os

ETIOPATHOGENESIS [8]:

The exact cause of implantation of the placenta in the lower segment is not known, but many theories have been postulated

- **Dropping down theory:** The fertilized ovum drops down and is implanted in the lower segment. Poor decidual reaction in the upper uterine segment is considered the cause. This explains the formation of central placenta previa.
- **Defective decidua**, results in spreading of the chorionic villi over a wide area in the uterine wall to get nourishment. During this process, not only the placenta

becomes membranous but encroaches onto the lower segment. Such a placenta previa may invade the underlying decidua or myometrium to cause placenta accreta, increta or percreta .

- **Big surface area of the placenta** : this may encroach onto the lower segment. (eg twins)

ASSOCIATED FACTORS:

1) Multiparity
2) Prior Cesarean Delivery
3) Cigarette Smoking
4) Elevated Prenatal Screening MSAFP Levels

CLINICAL FEATURES [3]:

Painless, causeless, unprovoked recurrent bleeding is the most hallmark of placenta previa In about one-third of cases, there is a history of "warning hemorrhage" which is usually minimal in amount. This bleeding occurs as the uterine body remodels to form the lower uterine segment. With this, the internal os dilates, and some of the implanted placenta inevitably separates. Bleeding that ensues is augmented by the inherent inability of myometrial fibers in the lower uterine segment to contract and thereby constrict avulsed vessels.

The symptoms and signs are usually proportionate to the amount of blood lost. The uterus is normally relaxed and soft, so that fetal parts are readily palpable.

One-third of the cases, are observed with malpresentations. Stallworthy in 1951 described that slowing of fetal heart rate on pressing the feta head down into the

pelvis and its prompt recovery on release of pressure was suggestive of posterior placenta previa. This became known as Stallworthy sign Asymptomatic cases are mostly detected by USG or at the time of cesarean section. [8]

Some patients can present with haemorrhagic shock and coagulation failure. There is increased risk of need for blood and blood products, admission in ICU and maternal mortality.

MANAGEMENT:

The three factors that determine the management are

1) gestational age

2) whether the patient is in labor

3) bleeding and its severity.

EXPECTANT MANAGEMENT:

Macafee And Johnson Regimen (1945)

The aim of this regimen is to continue pregnancy for fetal maturity without compromising the maternal health.

Indications for expectant management are:

1) Maternal good health status (hemoglobin > 10 g%; hematocrit > 30%).

2) Period of gestation is less than 37 weeks.

3) No active vaginal bleeding

4) Fetal well-being is assessed by NST and USG.[8]

Practically all women with placenta previa undergo cesarean delivery.

Following placental removal, there may be uncontrollable hemorrhage because of poorly contracted smooth muscle of the lower uterine segment.

Management of massive haemorrhage should occur in the normal way, including the use of uterotonic agents, which can be very helpful in reducing the blood loss associated with bleeding from the relatively atonic lower uterine segment. Advanced techniques are used and the use of bimanual compression or even aortic compression can buy time for extra help to arrive, or for the anaesthetist to 'catch up' haemodynamically in the unstable woman. (5)

Specific techniques that have been described for accreta in retrospective reviews and case reports include uterine and vaginal packing with gauze, balloon tamponade, the B-Lynch suture, vertical compression sutures and suturing an inverted lip of cervix over the bleeding placenta bed. Uterine and internal iliac artery ligation have been reported but make subsequent access for intervention radiology techniques and embolisation extremely difficult or impossible. (5)

COMPLICATIONS

1. Shock
2. Post partum hemorrhage
3. Difficulties during operative delivery
    - Very vascular lower uterine segment
    - Lateral extension of uterine incision
    - Morbidly adherent placenta
    - Bleeding from the placental bed.(17)

The overall perinatal mortality rate ranges between 4 to 8 %. The important causes are asphyxia, prematurity, abnormal presentations and congenital malformations.

This study has been undertaken to determine the incidence, maternal and perinatal outcomes in cases with ante partum haemorrhage in KAHER, Belagavi

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OBJECTIVES

- To study maternal and perinatal outcomes in cases with diagnosis of antepartum hemorrhage.

REVIEW OF LITERATURE

Antepartum haemorrhage is one of the most prevalent emergencies in obstetrics occurring at an incidence of 0.5-5% [(18)]. It is a grave obstetrical emergency and is a leading cause of maternal and perinatal mortality and morbidity. It complicates about 2-5% of all the pregnancies.

In India, maternal and perinatal mortality is still at a very high rate due to the associated problems like anemia, difficulties in transport in cases of emergency and restricted medical facilities [(19)]. Zeeman's study of obstetric critical care provision identifies hemorrhage as one of the most common reasons for admission to intensive care unit [(20)].

A descriptive study conducted on maternal and perinatal outcomes of antepartum hemorrhage at a tertiary care teaching hospital in Nepal was conducted from April 2012 to April 2016 which showed the incidence of APH was 0.23% . 74.9% of the patients had placenta previa and 24.1% had abruption placenta. 39.3% belonged in the age group of 25-29 years .14.3% of the patients with APH needed blood transfusion out of which 9.5% had postpartum hemorrhage. 1.2% had caesarean hysterectomy. 9.5% were admitted in neonatal intensive care unit and perinatal mortality was 10.7%. [(21)]

A retrospective study of obstetric outcome in antepartum haemorrhage carried out between May 2013 to June 2013 showed 40.4% patients with placenta previa, followed by 38.6% patients with abruption placenta and 21% with undetermined haemorrhage. Placenta praevia type I was the commonest constituting about 39.1% of the cases. Anaemia (71.9%) was found to be the most common

maternal risk factor followed by previous LSCS. LSCS (71.9%) was the most commom mode of delivery. Blood transfusion (66.7%) was found to be the most common maternal complications. Among the neonates that were delivered, 50.9% of them were preterm, 35.1% were full term and 14% were IUD [(22)]

100 cases of APH were included in a retrospective observational study on maternal and perinatal outcome conducted in Uttar Pradesh showed that placenta previa contributed to 80%, abruptio placenta 19% and unknown causes to 1% . Majority of the patients were in the age group of 25- 30 years. 84% cases of abruption placenta had pre eclampsia. Previous LSCS scar was present in 33.7% of the cases with placenta previa. Most commom mode of delivery was by LSCS IN 89% of the cases followed by vaginal delivery in 11% of the cases. Post partum hemorrhage was the major intrapartum complication involving 45% of the cases. Overall maternal mortality was 6%. Perinatal mortality was 42%. [(23)]

A prospective study conducted in Nagpur between 2013 to 2015 on maternal and fetal outcome in antepartum hemorrhage included 131 cases. 51.91% of the cases were with abruption placenta followed by placenta previa accounting to 45.8% and undetermined hemorrhage to 2.29% Maximum patients belonged to 25 to 29 years age group. 52.94% patients had pre eclampsia as a causative factor of abruption placenta while 41.67% had history of previous LSCS for placenta previa. Anemia was most common complication in antepartum hemorrhage followed by post partum hemorrhage. One patient with abruption placenta died of renal failure. Neonatal jaundice was the most common complication amongst the neonates followed by prematurity. [(24)]

A prospective observational study conducted between Sept 2012 to August 2014 in Telangana showed the incidence of antepartum hemorrhage was 3.8%. Patients with abruptio placenta being 56% constituted the larger group. Maximum number of patients were in the age group 20 to 30 years in both abruption (53.5%) and placenta previa (52.5%). Majority (56%) of the patients with antepartum hemorrhage had gestational age of 28 to 34 weeks.. This study had 64% of the patients with anemia at the time of admission.. Pre-eclampsia (36%) was found to be most common risk factor for APH. The commonest mode of delivery was by cesarean delivery i.e. 60%. Post partum hemorrhage was the most common complication observed in 22% of the cases. 5.3% of the patients with placenta previa had placenta accreta. DIC and renal failure were seen in 3.6% each. IUD or still births were noted in 31% of the cases. Neoantal deaths were observed in 5.8%. Prematurity was the most common complication observed in this study in 82.8% of the cases followed by neonatal jaundice which was observed in 51% of the cases. NICU admissions were present in 81.5% of the cases. [(25)]

Another one-year hospital based retrospective study conducted from 2014 to 2015 showed the incidence of APH was 1.2% accounting for 110 cases. Most of them were multigravidas with average gestation age of 32-34 weeks. Most of the cases (68%) presented with bleeding per vagina and 40 % with features of pre eclampsia. 74 (67%) cases delivered vaginally and C-section done in 36 (32.7%) cases, out of which 12 were done for placenta praevia. The maternal and perinatal mortality was 1.8% and 20% respectively. Out of 110 babies, 88 were live and healthy at the time of discharge.12 babies needed NICU admissions, out of which 2 babies died. Major neonatal morbidity was due to low birth weight related to preterm (15%) and NICU admissions (6%) due to birth asphyxia. Two maternal deaths during this study, one

patient died with irreversible hemorrhagic shock and multi organ failure. Another patient was brought to the hospital in a state of shock with placenta accreta . Patient underwent cesarean hysterectomy, had 6 units of blood transfusion. Post operatively patient had DIC, renal failure and succumbed to death. [(26)]

Another retrospective study for maternal and fetal outcome in patients presenting with Antepartum Hemorrhage carried out in Jaipur from July 2013 to July 2014 included 100 cases with antepartum hemorrhage with an incidence of 0.8%. Placenta previa (51.85%) constituted the larger group. Highest number of patients of APH belonged to the age group 25 to 29 years (40.7%) 62.95% of the patients were found to be anemic at admission. History of previous cesarean section was noted in 20.36% of the patients. .The commonest mode of delivery was by cesarean delivery . In abruption 33.33% patients delivered by cesarean and 66.66% had normal vaginal delivery. 92.85% of placenta previa had cesarean section, which was the largest group. Post partum hemorrhage was the most common complication observed in 9.2% of the cases. Blood transfusion was needed in 31.39% of the patients. IUD was noted in 12.96% of the cases. Neonatal deaths were observed in 3.7%.[(27)]

In a prospective study conducted in Gwalior including 100 cases of APH, showed Placenta previa contributing to 71%, Abruption placenta 27% and undetermined cause 2%. The incidence of placenta praevia was higher in age group between 26-30 yrs and in abruptio placentae incidence was higher in age group 21-25 yrs. Majority of cases i.e. 62% of APH were un-booked emergency cases. Hypertension was commonly associated with abruptio placentae. The perinatal mortality was 12.68% in placenta praevia and 18.52% in abruptio placentae. In cases with placenta praevia ,3 patients died of postpartum hemorrhage and hypovolemic

shock.[28]

In a retrospective analysis of antepartum hemorrhage over a period from January 2009 to December 2013 in Northern Nigerian Teaching Hospital recorded a total of 224 cases of APH out of the 18,273 cases admitted for delivery during the study period, giving a prevalence rate of 1.2%. The peak prevalence of APH was observed in the age group of 35–39 year accounting for 33%. The cesarean section was the most common mode of delivery. Major complications were intrauterine fetal deaths (42.8%), postpartum hemorrhage (24.2%), and anemia necessitating blood transfusion in 61.5%. [29]

Another retrospective study carried out over a period of one year including 226 cases of APH showed an incidence of 3.01%. Placenta previa accounted for 52.6% of the cases and abruption placenta for 29.6%. Most common associated obstetric conditions were anemia which was seen in 100% of the cases, followed by pre eclampsia, history of previous LSCS and IUGR. 178 (78.77%) women needed blood transfusion. 3 women had hysterectomy due to postpartum hemorrhage. Five women died, out of which 4 had abruptio placentae complicated by dissminated intravascular coagulation and 1 had placenta previa who came to the hospital with irreversible shock. [30]

A prospective study conducted in Tamil Nadu between February 2016 to July 2016 on perinatal outcome in women with antepartum hemorrhage had a total 3673 deliveries within the study period where134 patients presented with history of third trimester bleeding but only 60 patients found to have antepartum hemorrhage (1.6%). Of these 60 cases 46 (77%) were abruptio placentae and placenta praevia 12(20%) and 2(3%) were bleeding due to unidentified cause. 75% of placenta praevia were

associated with previous caesarean section. Most cases of abruption placenta were associated with hypertension. Of the alive babies of abruption and placenta praevia 13 and 9, 10 needed NICU admission and 4 were lost in the NICU due RDS. [31]

In a prospective study of causes and effects of antepartum Haemorrhage carried out in Mumbai over a period of 2 years showed incidence of APH as 1.31%, out of which placenta previa was 0.83% and abruptio placenta was 0.476%. APH was 39% in the age group between 26 - 30 years. 33 out of 45 cases of abruption placenta (73%) were associated with pregnancy-induced hypertension. Out of 124 cases who presented with APH, 112 patients (90.32%) delivered by Caesarean section and the remaining 12 (9.68%) delivered vaginally. Thirty six percent were complicated by PPH. Out of total number of women presenting with APH, 92 required blood and blood products transfusion (75%). For control of PPH, operative interventions such as vessel ligation, placental bed suturing and packing of the lower uterine segment were used. 80 patients (65%) had preterm deliveries, 50 babies (40%) were low birth weight (below 2 kg) and 39 (31%) 0 of babies were preterm with low birth weight. There were 27 deaths (21%), out of which 5 (4%) were macerated stillbirth and 8 (6%) were fresh stillbirth and 14 (11%) were neonatal deaths. 17 babies (16%) developed birth asphyxia. Out of 124 newborn babies, 54 (44%) required neonatal intensive care unit admission due to prematurity.[32]

A retrospective hospital based cohort study conducted in Etiopia between January 2013 to December 2013 for incidence and outcomes of antepartum hemorrhage showed incidence of antepartum hemorrhage as 5.1%. The major causes of antepartum hemorrhage were abruptio placentae amounting to 65.1% and placenta previa amounting to 26.7%. Cesarean delivery was the common mode of delivery

used in 106 (54.4%) of APH patients. It was employed in 49 (94.2%) patients with placenta previa of which 39 (79.6%) were done as emergency Six (3.1%) of the patients with APH died during the post partum period, four of which were because of hypovolemic shock secondary to bleeding. The other two deaths were because of respiratory failure. Of the 206 babies born, 63 (30.6%) were stillborn and additional 13 (6.3%) newborns died during the first seven days of life making perinatal mortality rate of 36.9%. [(33)]

A 1-year hospital based retrospective analysis of maternal and perinatal outcome in antepartum observed 100 cases with APH. 39 cases were of placenta praevia giving incidence of 1.073%, 31 cases of abruptio placentae giving incidence of 0.853%, 25 cases of indeterminate causes (0.688%) and 5 cases of local causes. Placenta praevia was found to be common in multiparty while abruptio placentae was common in lower parity . APH cases were noted more among the unbooked cases. Hypertension was observed in more cases of abruptio placentae as compared to placenta praevia .11% perinatal mortality rate was observed among total cases of APH. Out of 39 cases of placenta praevia, 1 (2.56%) patient died of severe haemorrhage and hypovolemic shock. There was 1 death (3.22%) among the 31 patients of abruptio placentae. The cause of death was uncontrolled PPH leading to coagulation disorder. [(34)]

A cross sectional study conducted in Zambia from October 2013 to January 2014 on outcomes in antepartum haemorrhage due to placenta previa and abruptio placenta. A total of 72 patients with APH were recruited. Of these, 40 (55.6%) cases had placenta praevia and 32 (44.4%) had abruptio placenta. Pregnancy-induced hypertension was significantly high in those with abruptio placenta compared to

placenta praevia. Abruptio placenta was significantly associated with stillbirths It was also associated with maternal near miss although did not reach statistical significance.[35]

A case control study for risk factors of antepartum haemorrhage in Nairobi showed the most common causes of antepartum haemorrhage was found to be placenta praevia (41.1%) followed by abruptio placenta (35.7%). A history of abdominal trauma, heavy lifting or fall in the current pregnancy, was reported in 14.3% of the cases. The other risk factors known to be associated with APH, that included a previous history of antepartum haemorrhage, history of caesarean delivery and uterine instrumentation among others, were found not to be significantly associated with antepartum haemorrhage in this study[36]

A retrospective study conducted in Thanjavur August 2014 to July 2015 ,134 cases of placenta previa were studied. Cases were highest in the age group 20-29 years and in multiparous group (63.43%). Most common risk factor was found to be previous cesarean section (39.5%) followed by abortion in 24.6%. Major degree of placenta previa constituted 69.4%. Massive blood transfusion was required in 0.04% of all cases. Adherent placenta previa was seen in 1.9%. 12.6% required hysterectomy. Prematurity contributed the most 63.6% followed by respiratory distress syndrome about 4.58%. [37]

In a prospective study conducted in Andhra Pradesh from July 2013 to June 2014 on maternal and perinatal outcome in Placenta previa 61 cases of placenta previa were registered amounting to the incidence of 52.4%. The mean age was 29yrs. 40 (65.57%) presented with bleeding per vagina. Preexisting anemia was seen in most of the patietns. PPH was seen 27.8% of the cases. 60% of the cases had history of

operative intervention.(16 cases with previous LSCS and 6 cases with abortion and D&C history). Of the 61 cases delivered 57 were live births and 4 still births. 14 babies required NICU admission. There is no maternal mortality. [38]

A cross sectional study conducted on outcomes in placenta previa included a total of 6873 deliveries. Placenta previa was observed in 19 cases resulting in an incidence of 0.276%. 97% of the cases were unbooked. 75% cases were between 20-25 yrs. History of prior caesarean section was seen in 42% cases. 31% cases had prior history of curettage. Post partum haemorrhage was seen in 89% of the cases. In terms of perinatal outcome 26.3% had intra uterine fetal demise. [39]

In a retrospective study conducted in Nepal for obstetric factors and pregnancy outcome in placenta previa had 21.4% cases of placenta previa. Maximum women were in age group 26-30 years. Sixty one percent of the patients were multipara. Sixteen patients had history of cesarean section and 20 cases had abortions in previous pregnancy. 45.7% of the babies were preterm and 27% were low birth weight babies. Seven babies had neonatal death. Almost one third (31.4%) of the patient had blood loss ≥500ml. There were four cases with blood loss ≥1000ml. Among them two had loss of more than two liters. Ten patients required blood transfusion. One patient had cesarean hysterectomy. [40]

In a prospective observational study for maternal and perinatal outcome in placenta previa in Mumbai total number of cases of placenta previa were 61, which is 0.05% of total deliveries. Maximum women belonged to age group 20-30 years. Out of these 19 cases had previous LSCS, and 10 cases had previous abortions. 2 cases with history of previous LSCS had placenta accreta. Out of 61 cases 45% of babies had LBW, and 18% babies needed NICU admission for respiratory distress [41]

In a retrospective descriptive study conducted for pregnancy outcomes in placental abruption showed an incidence of 0.092%. 30.1% had pregnancy induced hypertension, and 8.7% had premature rupture of membranes. 6.8% were substance abusers and smokers. Placental abruption attributed to maternal complications including hemorrhagic shock (19.4%), couvelaire uterus (16.5%) and DIC (5.8%). [(42)]

Another retrospective observational evaluation of risk factors and obstetric and perinatal outcome in abruptio placenta was conducted in Telangana from March 2013 to February 2015 showed incidence of abruptio placentae as 4.81%. Majority of the cases were primigravidas (58.87%) with commonest age group being 26-30 years. Risk factors associated were anemia (57.26%), pregnancy induced hypertension (31.45%), eclampsia (13.7%) Chronic hypertension (8.87%), Gestational diabetes mellitus (12.09%) and Premature rupture of membrane (16.94%). Maternal complications were postpartum hemorrhage in 22.59% of the cases, disseminated intravascular coagulation in 20.16 % of the cases, puerperal sepsis in 17.5% of the cases, hemorrhagic shock in 12.90% of the cases and acute renal failure in 10.48% of the cases. [(43)]

A retrospective ananlysis of maternal and fetal outcome among abruptio placentae cases in Karnataka had138 patients with abruption placenta. Majority of patients were in the age group 25-30 years. Incidence was higher in multi-parous. Major maternal complication seen was Shock, followed by postpartum hemorrhage, altered coagulation profile and renal failure. Eighty four (62.3%) women delivered live babies while 52(37.7%) were stillborn. Out of these 86 alive born babies four died in early neonatal period due to prematurity. Overall perinatal mortality was 40.5%. [(44)]

METHODOLOGY

Study design: A 1-year hospital based observational study**.**

Duration of study: 1 year

Period of study: January 2017 to December 2017

Source of data: All cases coming to the labor room of KAHER, Belagavi with a diagnosis of antepartum haemorrhage were included in the study.

Sample size: All cases coming to the labor room of KAHER, Belagavi with a diagnosis of antepartum haemorrhage were included in the study.

Selection criteria:

Inclusion criteria:

Women with a diagnosis of antepartum haemorrhage with period of gestation >20 weeks

Exclusion criteria

Known case of bleeding disorders

Ethical clearance:

Prior to the commencement, the study was approved by the Ethical and Research Committee, Jawaharlal Nehru Medical College, Belagavi

Method of collection of data

All cases coming to the labor room of KAHER, Belagavi with a diagnosis of antepartum haemorrhage were studied.

The identity, age, address, parity, period of gestation were recorded.

Complete details of the maternal and the neonatal outcome using the proforma were collected for analysis.

The risk factors associated with antepartum hamerrhage like gestational hypertension, anemia, pre eclampsia, previous history of LSCS, previous history of dilatation and curettage, fetal growth restriction, multiple pregnancy and previous history of antepartum haemorrhage were analysed.

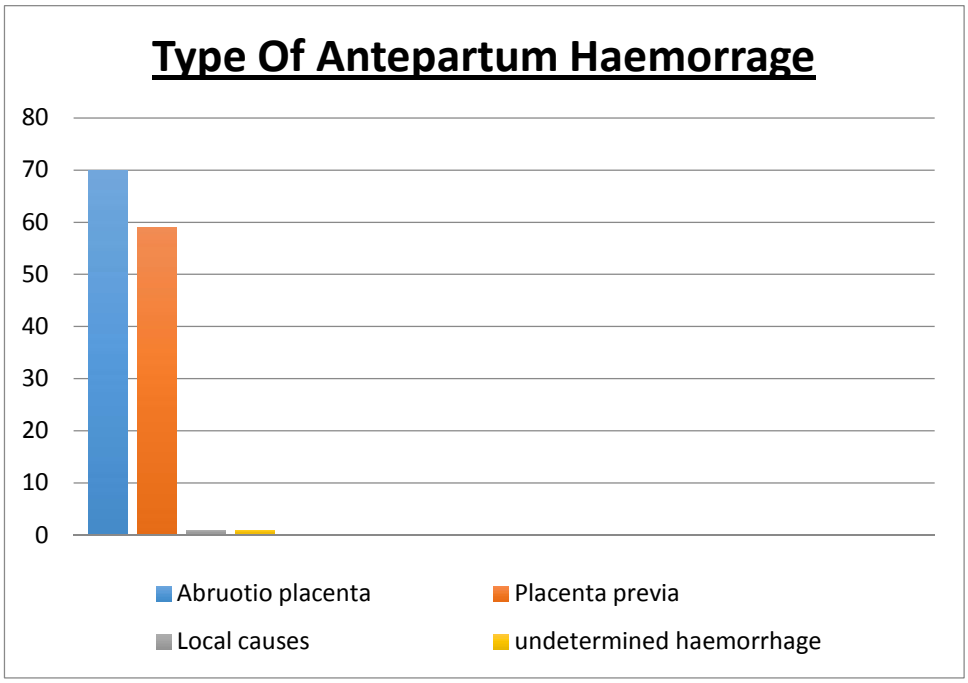
Complications associated antepartum haemorrhage like postpartum hemorrhage, peripartum hysterectomy, acute renal failure and coagulation failure were assessed. Perinatal outcomes like perinatal mortality, need for NICU admission, IUD at admission were assessed.

Cases with placenta previa were divided among cases with major type of placenta previa and minor type of placenta previa. Cases with abruption placenta were divided as cases with revealed, mixed and concealed type.

The data was analysed as percentages.

RESULTS

There were a total of 5393 deliveries from January 2017 to December 2017. The total number of cases with antepartum hemorrhage was 131making the incidence to 2.4%.



The total numbers of cases with placenta previa were 59 and with abruption placenta were 70.

There was 1 case with antepartum hemorrhage of unknown origin and one case with a cervical polyp.

RESULTS OF CASES WITH PLACENTA PREVIA

The incidence of placenta previa in the current study was 1.09%.

TABLE 1: ANTENATAL REGISTRATION

Cases	Number	Percentage
Registered	35	59.3
Registered Outside	24	40.7
Total	59	100

Among the cases with placenta previa, 35 (59.3%) cases were registered in our hospital and 24 (40.7 %) cases were registered outside.

TABLE 2 : GRAVID STATUS

Gravida	Number	Percentage
Primigravida	15	25.4
Multigravida	44	74.6
Total	59	100

74.6% cases with placenta previa were multigravida and 25.4% cases were primigravida, suggesting placenta previa is more common in multigravida.

TABLE 3 : AGE DISTRIBUTION

Age	Number	Percentage
<= 20 years	5	8.5
21 – 30 years	48	81.4
>= 31 years	6	10.1
Total	59	100

Most patients i.e. 81.4% with placenta previa were in the age group of 21to 30 years. 6 patients were above the age of 30 years and 5 patients were below the age of 20 years

TABLE 4 : GESTATIONAL AGE

Gestational Age	Number	Percentage
> 28 weeks	6	10.2
28 – 32 weeks	22	37.3
33 – 37 weeks	29	49.2
> 37 weeks	2	3.3
Total	59	100

49.2% patients who came to the hospital first time with diagnosis of placenta previa were in the gestational age of 33-37 weeks. 37.3% were in the gestaional age of 28 to 32 weeks and 10.2% cases were less than 28 weeks and 3.3 % were more than 37 weeks.

TABLE 5: CLASSIFICATION OF PLACENTA PREVIA (BROWNE'S CLASSIFICATION)

Type of placenta previa	**Number**	**Percentage**
Type 1	4	6.7
Type 2	14	23.8
Type 3	20	33.8
Type 4	21	35.7
Total	59	100

35.7% of the cases belonged to Type 4 of placenta previa according to Browne's classification

TABLE 6 : TYPE OF PLACENTA PREVIA

Type of placenta previa	**Number**	**Percentage**
Major	41	69.5
Minor	18	30.5
Total	59	100

Major type of placenta previa was predominant in this study

TABLE 7: MODE OF PRESENTATION

			Mode of presentation				Total
			ASYMPTOMATIC	**VAGINAL BLEEDING**	**VAGINAL BLEEDING +PAIN**	**VAGINAL BLEEDING+SHOCK**	
Type of Placenta previa	Major	Number	2	24	71	8	41
	Minor	Number	9	5	4	0	18
Total		Number	11	29	11	8	59
		Percentage	18.6%	49.2%	18.6%	13.6%	100.0%

Most of the patients presented with bleeding per vagina i.e in 49.2%. 11 cases came with no symptoms or signs. 8 cases came with hemorrhagic shock.

TABLE 8: MODE OF DELIVERY

			Mode of delivery
			LSCS
Type of Placenta previa	Major	Number	41
	Minor	Number	18
Total		Number	59
		Percentage	100.0%

All the patients with placenta previa underwent LSCS.

TABLE 8.1: MODE OF DELIVERY

	Emergency LSCS	Elective LSCS	Total
Major type of placenta previa	30	11	41
Minor type of placenta previa	4	14	18
	34	25	59

The risk factors associated with placenta previa assessed the current study are gestational hypertension, anemia, pre eclampsia, previous history of LSCS, previous history of dilatation and curettage, fetal growth restriction, multiple pregnancy and previous history of antepartum haemorrhage.

TABLE 9.1: ASSOCIATION BETWEEN ANEMIA AND TYPE OF PLACENTA PREVIA

			Anemia		Total	p-value
			NO	YES		
Type of Placenta Previa	Major	Number	7	34	41	**0.001**
	Minor	Number	11	7	18	
Total		Number	18	41	59	
		Percentage	30.5%	69.5%	100.0%	

69.5% of the patients had anemia.

The above table suggests there is a significant association between major placenta previa and anemia shown statistically by chi square. 82.9% cases among the patients with major placenta previa had anemia.

TABLE 9.2: ASSOCIATION BETWEEN HISTORY OF PREVIOUS LSCS AND TYPE OF PLACENTA PREVIA

			Previous LSCS		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	21	20	41	0.483
	Minor	Number	11	7	18	
Total		Number	32	27	59	
		Percentage	54.2%	45.8%	100.0%	

45.8% cases were with previous history of placenta previa – 20 cases with major type of placenta previa and 7 cases with minor type.

TABLE 9.3: ASSOCIATION OF PREVIOUS HISTORY OF D AND C AND TYPE OF PLACENTA PREVIA

			Previous history of D and C		Total	p-value
			NO	YES		
Type of placenta	Major	Number	33	8	41	**0.044**
	Minor	Number	18	0	18	
Total		Number	51	8	59	
		Percentage	86.4%	13.6%	100.0%	

13.6% cases had previous history of dilation and curettage. 8 cases with major placenta pevia had history of D and C which was statistically significant.

TABLE 9.4: ASSOCIATION BETWEEN PREVIOUS HISTORY OF ANTE-PARTUM HAEMORRHAGE AND TYPE OF PLACENTA PREVIA

			Previous history of APH		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	37	4	41	0.170
	Minor	Number	18	0	18	
Total		Number	55	4	59	
		Percentage	93.2%	6.8%	100.0%	

4 cases with major placenta previa had previous history of antepartum haemorrhage

TABLE 9.5: ASSOCIATION BETWEEN PRE ECLAMPSIA AND TYPE OF PLACENTA PREVIA

			Preeclampsia		Total	p-value
			NO	YES		
Type of Placenta Previa	Major	Number	26	15	41	0.277
	Minor	Number	14	4	18	
Total		Number	40	19	59	
		Percentage	67.8%	32.2%	100.0%	

19 cases with placenta previa were also diagnosed with pre eclampsia. There was no significant association between type of placenta previa and pre eclampsia

TABLE 9.6: ASSOCIATION BETWEEN MULTIPLE PREGNANCY AND TYPE OF PLACENTA PREVIA

			Multiple pregnancy		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	39	2	41	0.340
	Minor	Number	18	0	18	
Total		Number	57	2	59	
		Percentage	96.6%	3.4%	100.0%	

Two cases with placenta previa were with multiple pregnancies.

TABLE 9.7: ASSOCIATION BETWEEN FGR AND TYPE OF PLACENTA PREVIA

			FGR		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	25	16	41	**0.002**
	Minor	Number	18	0	18	
Total		Number	43	16	59	
		Percentage	72.9%	27.1%	100.0%	

27.1% patients with placenta previa had fetal growth restriction. There is significant association between major type of placenta previa and fetal growth restriction. 39% among the cases with major placenta previa had FGR.

TABLE 9 .8: ASSOCIATION BETWEEN GESTATIONAL HYPERTENSION AND TYPE OF PLACENTA PREVIA

			Gestational HTN		Total	p-value
			NO	YES		
Type of Placenta Previa	Major	Number	30	11	41	0.354
	Minor	Number	11	7	18	
Total		Number	41	18	59	
		Percentage	69.5%	30.5%	100.0%	

30.5% of the cases with placenta previa had gestational hypertension. 41 cases had major placenta previa and 18 had minor placenta previa

Complications associated placenta previa assessed in this study are postpartum hemorrhage, peripartum hysterectomy, acute renal failure and coagulation failure.

TABLE 10.1: ASSOCIATION OF POST PARTUM HAEMORRHAGE AND TYPE OF PLACENTA PREVIA

			Postpartum hemorrhage		Total	p-value
			NO	YES		
Type Of Placenta previa	Major	Number	31	10	41	**0.021**
	Minor	Number	18	0	18	
Total		Number	49	10	59	
		Percentage	83.1%	16.9%	100.0%	

10 cases with placenta previa had postpartum haemorrhage. All these 10 cases had major type of placenta previa.

TABLE 10.2: ASSOCIATION OF PERIPARTUM HYSTERECTOMY AND TYPE OF PLACENTA PREVIA

			Peripartum Hysterectomy		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	38	3	41	0.239
	Minor	Number	18	0	18	
Total		Number	56	3	59	
		Percentage	94.9%	5.1%	100.0%	

3 cases needed peripartum hysterectomy. Peripartum hysterectomies were indicated due to uncontrolled bleeding from the placenta bed, atonic PPH and morbidly adherent placenta.

TABLE 10.3: ASSOCIATION BETWEEN TYPE OF PLACENTA PREVIA AND DISSEMINATED INTRAVASCULAR COAGULATION

			DIC		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	34	7	41	0.062
	Minor	Number	18	0	18	
Total		Number	52	7	59	
		Percentage	88.1%	11.9%	100.0%	

7 cases with major placenta previa had DIC.

TABLE 10.4: ASSOCIATION BETWEEN ACUTE RENAL FAILURE AND TYPE OF PLACENTA PREVIA

			Acute Renal Failure		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	39	2	41	0.340
	Minor	Number	18	0	18	
Total		Number	57	2	59	
		Percentage	96.6%	3.4%	100.0%	

2 cases with major type of placenta previa developed acute renal failure

TABLE 11: ASSOCIATION BETWEEN TYPE OD PLACENTA PREVIA AND NEED FOR BLOOD AND BLOOD PRODUCTS

			Transfusion of blood and blood products		Total	p-value
			ABSENT	PRESENT		
Type of placenta previa	Major	Number	14	27	41	0.340
	Minor	Number	14	4	18	
Total		Number	28	31	59	
		Percentage	47.5%	52.5%	100.0%	

The perinatal outcomes assessed were perinatal mortalities, number of NICU admission, gestational age at birth and birth weights.

TABLE 12: ASSOCIATION BETWEEN PERINATAL MORTALITY AND TYPE OF PLACENTA PREVIA

			Perinatal mortality		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	34	7	41	0.062
	Minor	Number	18	0	18	
Total		Number	52	7	59	
		Percentage	88.1%	11.9%	100.0%	

There were 7 perinatal mortalities among cases with major placenta previa

TABLE 13 : IUD AT ADMISSION

			IUD at admission		Total	p-value
			NO	YES		
Type of placenta previa	Major	Number	37	4	41	0.170
	Minor	Number	18	0	18	
Total		Number	55	4	59	
		Percentage	93.2%	6.8%	100.0%	

4 cases with major placenta previa presented with intra uterine fetal demise

TABLE 14 : ADMISSION TO NICU

			NICU admission		Total	
			NO	YES		
Type of placenta previa	Major	Number	12	29	41	.000
	Minor	Number	16	2	18	
Total		Number	28	31	59	
		Percentage	47.5%	52.5%	100.0%	

The most common mode of cause of NICU admission was respiratory distress

TABLE 15: GESTATIONAL AGE AT DELIVERY

			Gestational age at delivery		Total	p-value
			Term	Preterm		
Type of placenta previa	Major	Number	0	41	41	0.170
	Minor	Number	2	16	18	
Total		Number	2	57	59	
		Percentage	3.3%	96.7%	100.0%	

TABLE 16 : DISTRIBUTION ACCORDING TO BIRTH WEIGHT

Birth weight	Number of cases	Percentage
1-1.5 kg	10	16.9
1.6 – 2 kg	11	18.6
2.1 – 2.5 kg	20	33.8
>2.5 kg	18	30.7
Total	59	100

RESULTS IN CASES WITH ABRUPTIO PLACENTA:

TABLE 17 : ANTENATAL REGISTRATION

Cases	Number	Percentage
Registered	27	38.6
Registered Outside	43	61.4
Total	70	100

Among the cases with abruption placenta, 27 cases (38.6%) were registered with in our hospital, while a major number of cases i.e. 43(61.4%) were registered outside.

TABLE 18: GRAVID STATUS

Gravida	Number	Percentage
Primigravida	30	42.9
Multigravida	40	57.1
Total	70	100

40(51.2%) patients who presented with abruption placenta were multigravidas and 30 (42.8%) were primigravida suggesting that multigravidas are more prone to abruption placenta.

TABLE 19: AGE DISTRIBUTION

Age	**Number**	Percentage
<= 20 years	8	11.4
21 – 30 years	50	71.4
>= 31 years	12	17.2
Total	70	100

50 cases were between the age group of 21 – 30 years, 8 cases were less than 20 years and 12 were more than 30 years.

TABLE 20: GESTATIONAL AGE

Gestational Age	**Number**	**Percentage**
28 – 32 weeks	5	7.2
33 – 37 weeks	56	80
> 37 weeks	9	12.8
Total	70	100

80% cases with abruption placenta were in the gestational age between 33 – 37 weeks. 9 cases were between the gestational age more than 37 weeks.

TABLE 21: TYPE OF ABRUPTIO PLACENTA

Type of abruption placenta	**Number**	**Percentage**
Concealed	17	24.2
Revealed	50	71.4
Mixed	3	4.4
Total	70	100

50 (71.4%) cases with abruption placenta were revealed type, 17(24.2%) cases were concealed type and 3 cases were mixed type.

TABLE 22 : ACCORDING TO PAGES CLASSIFICATION

Grades	Number	Percentage
Grade 0	14	20
Grade 1	20	28.5
Grade 2	9	12.9
Grade 3	27	38.6
Total	70	100

27 (38.6%) cases were with Grade 3 according to Pages Classification suggesting 27 (38.6%) patients presented IUD. 20 patients were with Grade 1, 14 (20%) were with Grade 0 and 9 (12.9%) were with Grade 2.

TABLE 23 : MODE OF PRESENTATION

Mode of presentation	Concealed	Revealed	Mixed	Total	Percentage
Pain	13	0	0	13	18.6
Vaginal bleeding	0	18	0	18	25.7
Vaginal bleeding + pain	0	32	3	35	50
Shock	4	0	0	4	5.7
Total	17	50	3	70	100

Most common mode of presentation was pain along with vaginal bleeding (50%). 13 patients came with complain of only pain and 18 with vaginal bleeding. 4 patients came in hemorrhagic shock.

TABLE 24: MODE OF DELIVERY

	Concealed	**Revealed**	**Mixed**	**Total**	**Percentage**
Vaginal delivery	13	8	3	24	34.3
LSCS	4	42	0	47	65.7
	17	50	3	70	100

Most common mode of delivery was by LSCS in 47(65.7%) patients. Vaginal delivery was in 24 patients.

Factors associated with abruption placenta evaluated in this study include gestational hypetension, anemia, pre eclampsia, eclampsia, previous history of LSCS, previous history of dilatation and curettage, fetal growth restriction, multiple pregnancy and previous history of antepartum hemorrhage.

TABLE 25.1: ASSOCIATION BETWEEN ANEMIA AND TYPE OF ABRUPTIO PLACENTA

			Anemia		Total	
			NO	YES		
Type of abruption placenta	Concealed	Number	11	6	17	P value **0.037**
	Mixed	Number	0	3	3	
	Revealed	Number	12	40	50	
Total		Number	21	49	70	
		Percentage	30.0%	70.0%	100%	

70% of the cases with abruption placenta had anemia. 40 cases with revealed abruption had anemia, 6 cases with concealed abruption and all the cases with mixed type of abruption had anemia

TABLE 25.2: ASSOCIATION BETWEEN GESTATIONAL HYPERTENSION AND TYPE OF ABRUPTIO PLACENTA

			Gestational HTN		Total	P value
			NO	YES		
Type of abruption placenta	Concealed	Number	8	9	17	
	Mixed	Number	3	0	3	
	Revealed	Number	45	5	50	
Total		Number	56	14	70	0.166
		Percentage	80.0%	20.0%	100%	

20% cases with abruption placenta had gestational hypertension.

TABLE 25.3: ASSOCIATION BETWEEN PRE ECLAMPSIA AND TYPE OF ABRUPTIO PLACENTA

			Pre eclampsia		Total	P value
			NO	YES		
Type of abruption placenta	Concealed	Number	13	4	17	
	Mixed	Number	0	3	3	**0.020**
	Revealed	Number	12	38	50	
Total		Number	25	45	70	
		Percentage	35.7%	64.3%	100%	

Majority of the cases with abruption placenta i.e. 64.3% had pre eclampsia. Pre eclampsia was seen in 38 cases with revealed type of abruption placenta, 4 cases with concealed type and all the cases with mixed type of abruption placenta.

TABLE 25.4: ASSOCIATION BETWEEN ECLAMPSIA AND TYPE OF ABRUPTIO PLACNETA

			Eclampsia		Total	P value
			Absent	Present		
Type of abruption placenta	Concealed	Number	17	0	17	0.137
	Mixed	Number	3	0	3	
	Revealed	Number	46	4	50	
Total		Number	66	4	70	
		Percentage	94.3%	5.7%	100%	

4 cases with eclampsia had revealed type of abruption placenta

TABLE 25.5: ASSOCIATION BETWEEN MULTIPLE PREGNANCY AND ABRUPTIO PLACENTA

			Multiple pregnancy		Total	P value **0.137**
			Absent	Present		
Type of abruption placenta	Concealed	Number	17	0	17	
	Mixed	Number	3	0	3	
	Revealed	Number	46	4	50	
Total		Number	66	4	70	
		Percentage	94.3%	5.7%	100%	

4 cases with revealed type of abruption placenta were associated with multiple pregnancies

TABLE 25.6 : ASSOCIATION BETWEEN HISTORY OF PREVIOUS LSCS AND TYPE OF ABRUPTIO PLACENTA

			History of previous LSCS		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	15	2	17	P value **0.014**
	Mixed	Number	3	0	3	
	Revealed	Number	41	9	50	
Total		Number	59	11	70	
		Percentage	84.3%	15.7%	100%	

11 cases with abruption placenta had history of previous LSCS . 9 of these cases were with revealed type of abruption and 2 cases were with concealed type.

TABLE 25.7: ASSOCIATION BETWEEN FETAL GROWTH RESTRICTION AND TYPE OF ABRUPTIO PLACENTA

			Fetal growth restriction		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	17	0	17	P value **0.758**
	Mixed	Number	0	3	3	
	Revealed	Number	43	7	50	
Total		Number	60	10	70	
		Percentage	85.7%	14.3%	100%	

14.3% patients with abruption had fetal growth restriction , 7 were in revealed type of abruption and 3 were in mixed type.

TABLE 25.8: ASSOCIATION BETWEEN PREVIOUS HISTORY OF ANTEPARTUM HAEMORRHAGE AND TYPE OF ABRUPTIO PLACENTA

			Previous history of APH		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	13	4	17	P value **0.100**
	Mixed	Number	0	3	3	
	Revealed	Number	44	6	50	
Total		Number	57	13	70	
		Percentage	81.4%	18.6%	100%	

18.65 cases had history of previous antepartum haemorrhage

TABLE 26: ASSOCIATION BETWEEN TYPE OF ABRUPTIO PLACENTA AND NEED FOR BLOOD AND BLOOD PRODUCTS

			Need for blood products		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	8	9	17	P value **0.202**
	Mixed	Number	0	3	3	
	Revealed	Number	9	41	50	
Total		Number	17	53	70	
		Percentage	24.3%	75.7%	100%	

75.7% patients with diagnosis of abruption placenta needed transfusion of blood and blood products. 41 among them were with revealed type ,9 with concealed type and 3 with mixed type.

TABLE 27.1: ASSOCIATION BETWEEN POSTPARTUM HAEMORRHAGE AND TYPE OF ABRUPTIO PLACENTA

			Post partum hemorrhage		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	15	2	17	P value **0.391**
	Mixed	Number	0	3	3	
	Revealed	Number	36	14	50	
Total		Number	51	19	70	
		Percentage	72.9%	27.1%	100%	

TABLE 27.2: ASSOCIATION BETWEEN PERIPARTUM HYSTERECTOMYAND TYPE OF ABRUPTIO PLACENTA

			Peripartum hysterectomy		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	17	0	17	P value **0.300**
	Mixed	Number	3	0	3	
	Revealed	Number	48	2	50	
Total		Number	68	2	70	
		Percentage	97.1%	2.9%	100%	

TABLE 27.3: ASSOCIATION BETWEEN COUVELAIRE UTERUS AND TYPE OF ABRUPTIO PLACENTA

			Couvelaire uterus		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	13	4	17	P value **0.142**
	Mixed	Number	0	3	3	
	Revealed	Number	33	17	50	
Total		Number	46	24	70	
		Percentage	65.7%	34.3%	100%	

TABLE 27.4: ASSOCIATION BETWEEN DIC AND TYPE OF ABRUPTIO PLACENTA

			DIC		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	13	4	17	P value **0.429**
	Mixed	Number	0	3	3	
	Revealed	Number	35	15	50	
Total		Number	48	22	70	
		Percentage	68.6%	31.4%	100%	

22 patients had Disseminated intravascular coagulopathy. All these patients needed blood and blood products.

TABLE 27.5 : ASSOCIATION BETWEEN ACUTE RENAL FAILURE AND TYPE OF ABRUPTIO PLACENTA

			Acute renal failure		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	13	4	17	P value **0.557**
	Mixed	Number	3	0	3	
	Revealed	Number	46	4	50	
Total		Number	62	8	70	
		Percentage	88.6%	11.4%	100%	

8 patients developed acute renal failure.

The perinatal outcomes assessed were perinatal mortalities, number of NICU admission, gestational age at birth and birth weights.

TABLE 28: ASSOCIATION BETWEEN PERINATAL MORATALITY AND TYPE OF ABRUPTIO PLACENTA

			Perinatal Mortality		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	17	0	17	P value **0.064**
	Mixed	Number	3	0	3	
	Revealed	Number	44	6	50	
Total		Number	64	6	70	
		Percentage	91.4%	8.6%	100%	

TABLE 29: ASSOCIATION BETWEEN IUD AT ADMISSION AND TYPE OF ABRUPTIO PLACENTA

			IUD at admission		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	13	4	17	P value **0.202**
	Mixed	Number	0	3	3	
	Revealed	Number	32	18	50	
Total		Number	45	25	70	
		Percentage	64.3%	35.7%	100%	

TABLE 30: ADMISSION IN NICU

			Admission in NICU		Total	
			Absent	Present		
Type of abruption placenta	Concealed	Number	11	6	17	P value **0.029**
	Mixed	Number	3	3	3	
	Revealed	Number	26	24	50	
Total		Number	40	30	70	
		Percentage	57.1%	42.9%	100%	

30 babies needed NICU admission. The most common cause for NICU admission was respiratory distress

TABLE 31 : GESTATIONAL AGE AT BIRTH

			Gestational age		Total	
			Preterm	Term		
Type of abruption placenta	Concealed	Number	13	4	17	P value
	Mixed	Number	3	0	3	
	Revealed	Number	45	5	50	
Total		Number	61	9	70	0.166
		Percentage	87.1%%	12.9%	100%	

TABLE 32 : DISTRIBUTION ACCORDING TO BIRTH WEIGHT

Birth weight	Number of cases	Percentage
1-1.5 kg	3	4.2
1.6 – 2 kg	10	14.3
2.1 – 2.5 kg	27	38.6
>2.5 kg	30	42.9
Total	70	100

DISCUSSION

In the current study, a total of 131 cases with antepartum hemorrhage were noted. 70 cases were with abruptio placenta and 59 cases with placenta previa, making its incidence among cases with antepartum hemorrhage to 53.4% and 45% respectively.

Among the cases with placenta previa , it was observed that majority of the cases were multigravidas. 74.6% were multigravida and 25.4% were primigravidas (Table 2). This observation is comparable to results in studies conducted by Dr. Virendre Prasad pandey et al at NIMS, Jaipur in the year 2014 and Dr. Lavanyakumari Sella et al at Rangaraya Medical College, Andra Pradesh[34,38].

The current study recognized the most common age group to present with placenta previa was between 21 to 30 years(Table 3). This data correlates with the incidence in the same age groups as reported by Dr. Raja Rajeshwari R et al[37] in Tamil Nadu in 2016 and Dr. Lavanyakumari Sella et al[38].

The most common gestational age in the present study to be diagnosed as placenta previa was between 33-37 weeks (Table 4) which can be compared to the results in study by Tariq Khashoggi et al [45] whereas study by Dr. Lavanyakumari Sella et al[38] showed maximum patients to be diagnosed as placenta previa were between the gestational age of 28 – 32 weeks.

Maximum patients were with type 4 and type 3 of placenta previa according to F.J. Browne's classification. i.e. 21 and 20 patients respectively (Table 5) . Whereas the study by Dr. Lavanyakumari Sella et al[38] observed maximum patients with type 2 of placenta previa.

41 cases were with major degree of placenta previa and 18 cases with minor degree of placenta previa. (Table 6)

In the current study, the most common mode of presentation was painless vaginal bleeding seen in 49.2% of the patients and 18.6% patients presented with vaginal bleeding with preterm labor.(Table 7)

34 patients underwent an emergency LSCS (Table 8.1). 11 patients presented to the hospital asymptomatic for elective LSCS. 8 came with hemorrhagic shock and were resuscitated. 14 patients came with complain of bleeding per vagina and were given expectant management by Macafee And Johnson Regimen. These patients underwent an elective LSCS at term.

All the patients with placenta previa in this study underwent LSCS (Table 8). 34 underwent emergency LSCS and the rest an elective LSCS. Study conducted by Dr Anand Bhatt [46] et al had 64% LSCS as the mode of delivery.

The associated factors with placenta previa looked for in the current study were gestational hypertension, anemia, pre eclampsia, previous history of LSCS, previous history of dilatation and curettage, fetal growth restriction, multiple pregnancy and previous history of antepartum haemorrhage.

The current study determines the most common risk factor associated with placenta previa as anemia. Anemia was observed in 69.5% of the cases with placenta previa.(Table 9.1). Anemia was noted as the most common risk factors in studies conducted by Dr Anand Bhatt [46] et al in BJMC,Ahmedabad in the year 2014 and Dr Raja Rajeshwari R et al[37] in Tamil Nadu in 2016. A higher association between major type of placenta previa and anemia ($p = 0.001$) was observed.

In the present study, 27.1% patients i.e. 16 cases had fetal growth restriction (Table 9.7). All 16 cases had major type of placenta previa, which was found to be statistically significant (p=0.002), suggesting that patients with major type of placenta previa are more prone to have fetal growth restrictions.

In our study 27 cases (45.8%) had history of previous LSCS (Table 9.2). Out of these 27 cases 48.8% were with major type of placenta previa and 38.9% were with minor type of placenta previa. Studies conducted by Dr V N Kurude et al [41] in JJ Hospital, Munbai in 2016 and Dr CH Nirmala et al [39] in VIMS , Visakhapatnam showed similar results . 8 cases had history of previous dilatation and curettage (Table 9.3) . All these cases had major type of placenta previa making it a significant risk factor for major type of placenta previa.

Other associated factors scrutinized in the current study include pre eclampsia (Table 9.5), 19(32.2%) cases had pre eclampsia , out of which 36.5% had major placenta previa and 22.2% had minor placenta previa and 18 (30.5%) cases had gestational hypertension. A study conducted by Dr Raja Rajeshwari R et al[37] in Tamil Nadu in the year 2014 an association of only 3% of placenta previa with pre eclampsia. It shows no significant association between hypertensive disorders and incidence of placenta previa.

2 patients in the present had multiple pregnancies that amounted to 3.4% . Both the patients had major type of placenta previa. These results are comparable to a study conducted by Dr Shonali Mayekar et al [17] in Gulgarba in 2008, whereas double the incidence was seen in Savita Rani. [47] 4 cases with major placenta previa had previous history of placenta previa. Study conducted by (Table 9.4)Dr Anand Bhatt [46] et al in BJMC,Ahmedabad in the year 2014 showed similar results.

Complications associated placenta previa assessed in this study are postpartum haemorrhage, peripartum hysterectomy, acute renal failure and coagulation failure. In the current study, 16.9% of the patients' developed atonic post partum hemorrhage (Table 10.1). All the 10 cases had major placenta previa . This was found to be statistically significant. All these 10 cases needed transfusions of blood and blood products. One case needed a peripartum hysterectomy. These results were comparable to studies conducted by Dr Anand Bhatt [46] et al and Dr Raja Rajeshwari R et al[37].

There were a total of 3 peripartum hysterectomies (Table 10.2). All had major type of placenta previa. The diagnosis of the patients are as follows:

1) Patient, G2P1L1 with 35 weeks with central placenta previa with previous history of LSCS presented to hospital with bleeding per vagina. Patient was taken up for emergency LSCS. Patient delivered a 2.3 kg baby. Patients had an enormous amount of bleeding from the placental bed. Hemostatic sutures were taken at the placental bed but bleeding couldn't be controlled. Peripartum hysterectomy was done after counseling and taking proper consent from the attenders. 2 units of packed cell and 8 units of FFPs were transfused to the patient.
2) Patient, G2P1L1 with 33 weeks with major type of placenta previa with previous history of LSCS presented to hospital with bleeding per vagina. This patient also under went an emergency LSCS. Patient had atonic postpartum hemorrhage. Medical management was given to the patients with utero tonics (Inj. Oxytocin 20 units iv and Inj. Methergin 0.2 mg iv). Haymans compression sutures were taken. Uterus was still atonic even with these measures. Peripartum hysterectomy was done after counseling and taking proper informed consent from the attenders. Patient had disseminated intravascular coagulopathy and needed ICU admission. 3

units packed cells, 8 units FFPs and 8 units RDPs were transfused to this patient.

3) 3rd patient was taken electively for LSCS as case of major placenta previa. Patient had morbidly adherent placenta, which was diagnosed intraoperative. Patient had atonic PPH. Peripartum hysterectomy was done after medical management and inters iliac artery ligation. Patient was given 3 unit packed cell, 10 units FFPs and 8 units RDPs. Patient needed ICU admission.

7 cases with major type of placenta previa had DIC (Table 10.4). 2 of theses cases developed acute renal failure. Two of the patients who had DIC had presented to the hospital with hemorrhagic shock. Both the patient were resuscitated.

1) One patient, primigravida with 32 weeks gestational age with central placenta previa, was resuscitated with 2 units of packed cell, 6 units RDPs and 6 units FFPs before taking for an emergency LSCS. Post operatively another unit of packed cell along with 4 units RDPs and 4 units RDPs was transfused. Patient needed ICU admission.
2) Second patient, G2P1L1 with 35 weeks gestational age presented to the hospital with haemorrhagic shock. Patient was given 3 units packed cells, 6 units FFPs and 4 unit RDPs. Patient underwent an emergency LSCS.

4 patients with major placenta previa came to hospital with intrauterine fetal demise

31 babies i.e. 52.5% needed NICU admission (Table 14). These results are comparable to studies conducted by Dr Shonali Mayekar et al [17] and by Dr Raja Rajeshwari R et al[37]. The most common indication for admission in NICU admission was prematurity followed by respiratory distress. Most of the babies were preterm, with maximum in the birth weight range of 2.1-2.5 kg.

In the present study, there were 70 cases of abruption placenta.

Among the above 70 cases, it was observed that majority of the cases were multigravidas. 57.1% cases were multigravidas and 42.9% were primigravidas.

These results are comparable to the studies conducted by Dr Kevin Nandonde et al[48] in Tanzania in the year 2016 and Dr Aesha Patel et al[49] in Ahmedabad in the year 2015.

38.6% cases with abruptio placenta were registered in our hospital and 61.4% were registered outside. These results are similar to the studies conducted by Dr Vrunda Choudhary et al[49] in Telangana in the year 2015 and by Dr Mohammed Ismail Khan et al[50] in Hydrebad in the year 2017. Antenatal registration is an important aspect in preventing abruption placenta as it helps in detecting the high-risk pregnancies.

In the present study maximum patients with abruption placenta were in the age group of 21 – 30 years i.e. 71.4%. 17.2% were above the age of 30 years and 11.4% were less than 20 years of age . This was comparable to study conducted by Dr Vrunda Choudhary et al[49] who also found highest incidence in the same age group. The youngest age at which abruption was found in this study was 18 years and the highest was 37 years.

80% cases with abruption placenta presented with gestational age between 33-37 weeks. 5 cases were between the gestation of 28 – 32 weeks and 9 cases were with more than 37 weeks period of gestation. Dr Renuka P[44] et al found the highest incidence in the same subgroup.

When type of abruption was analyzed, revealed type (71.4%) of the abruption had the highest incidence followed by concealed type (24.2%) and mixed type (4.4%) whereas study by Dr Lalit D Kapadia et al [51] in the year 2017 showed mixed type of abruption with highest incidence. Study by Dr Mohammed Ismail Khan et al[50] in Hydrebad in the year 2017 showed similar incidence of revealed type of abruption as the current study. According to Pages classification 38.6% patients belonged to the grade 3 ,28.5%to grade 1, 20 % to grade 0 and 12.9% to grade 2.

35 patients presented to the hospital with severe pain in abdomen associated with vaginal bleeding. This was the most common mode of presentation. 4 patients came with haemorrhagic shock.

47 patients underwent emergency LSCS making it the most common mode of delivery. The most common indication for LSCS was fetal distress.

24 patients underwent a vaginal delivery. Similar results regarding mode of delivery was observed in study conducted by Dr Amornrath Pitaphrom et al [42]. Most common indication for LSCS was fetal distress.

Factors associated with abruption placenta evaluated in this study include gestational hypertension, anemia, pre eclampsia, eclampsia, previous history of LSCS, previous history of dilatation and curettage, fetal growth restriction, multiple pregnancy and previous history of antepartum hemorrhage.

Anemia was observed in 70% of the cases. 40 cases among this had revealed type of abruption placenta, 6 had concealed type and 3 had mixed type of abruption. The association of revealed type of abruption placenta and anemia was found to be statistically significant (p =0.037). Studies by Dr Renuka P[44] et al and Dr Mohammed

Ismail Khan et al[50] showed similar incidence of anemia in abruption placenta. Most of these cases needed transfusion of blood and blood products.

In the present study 64.3% cases had pre eclampsia. Out of these 38 were with revealed type of abruption, 4 with concealed type and 3 with mixed type. Statistical significance was observed between revealed type of abruption and pre eclampsia. This was comparable to the incidence of pre eclampsia in cases with abruption placenta found in study by Dr Lalit D Kapadia et al [51].

4 patients who had presented with eclampsia had revealed type of abruption placenta. 14 patients had gestational hypertension. Of these 9 had concealed type of abruption and 5 had revealed type of abruption.

11 cases with abruption had history of previous LSCS. 9 of these cases had revealed type of abruption and 2 had concealed type of abruption. This was of statistical significance ($p = 0.014$).

14.3% cases with abruption had fetal growth restriction. 7 were with revelaed type and 3 with mixed type.

27.1% cases i.e. 19 cases with abruptio placenta had post partum hemorrhage. 14 of these cases were revealed type of abruption 2 was concealed type and 3 were with mixed type. Similar incidence of postpartum hemorrhage was observed in studies by Dr Mohammed Ismail Khan et al[50] and Dr Aesha Patel et al[49].

A total 53 patients with abruption needed transfusion of blood and blood products. 41 had revealed type of abruption. All the 19 patients with post partum hemorrhage were given blood and blood products. 24 patients had couvelaire uterus. 17 of these had revealed type abruption, 4 had concealed type and 3 had mixed type.

Peripartum hysterectomy was done for 2 patients

1) Patient, G3P3L3 with 33 weeks gestation with orevious history of LSCS came to the hospital with complain of severe pain abdomen with per vagina. Patient was in class 2 hemorrhagic shock and DIC (Sr fibrinogen <50). Patient under went an emgerency LSCS. Intra operatively patient had a couvelaire uterus with 430 gms of retroplacental clots. Patient had PPH which tried to be managed medically with Inj .oxytocin and Inj. Carboprost. Peripartum hysterectomy was done in view of atonic PPH . patient was transfused 4 units packed cell, 12 units of FFPs and 10 units of RDPs. Patient needed ICU admission.
2) Patient , G2P1L0 with 34 weeks gestation with previous history of LSCS came to the hospital with complain of severe pain abdomen with per vagina. Patient was in class 1 hemorrhagic shock Patient under went an emgerency LSCS. Intra operatively patient had a couvelaire uterus with 300 gms of retroplacental clots. Patient had PPH, which tried to be managed medically with Inj. oxytocin and Inj. Carboprost. Peripartum haemorrhage was done in view of atonic PPH.Patient was transfused 2 units packed cell, 6 units of FFPs and 6 units of RDPs. Patient needed ICU admission.

25 patients had come to the hospital with intra uterine fetal demise at admission. 18 of these patients were with revealed type of abruptio placenta. 4 were with concealed type f abruption and 3 with mixed type of abruption. 8.6% patients had perinatal mortalities.

30 babies i.e 42.9% needed NICU admission. The most common cause for NICU admission was respiratory distress followed by prematuiry. This result was comparable to a study conducted by Dr Lalit D Kapadia et al [51].

1 case was with local cause i.e. cervical polyp. The patients presented to the hospital at 33 weeks of gestational age with complain of per vaginal bleeding. On per speculum examination a polyp 1*1 cm was noted arising from the cervix. The patient underwent an elective LSCS at 38 weeks.

Another patient, G2P1L1 with 33 weeks gestation with previous LSCS (4 years back) came to the hospital with complain of bleeding per vagina. On local examination there were no lesions. There was no history of genital tract trauma. On per speculum examination, there was no polyp, cervical erosion, but active bleeding was seen. On USG, placenta was fundo - anterior in location and there was no evidence of separation. Uterine rupture and vasa previa was ruled out. A uterine artery angiogram was done and uterine arterio-venous malformation was ruled out. Hence patient was marked as *antepartum hemorrhage of unknown origin*. Patient's hemoglobin was 8 g/dl. 1 pint PCV was transfused. Patient was advised admission till delivery, but she refused. Patient underwent an elective LSCS at 37 weeks.

CONCLUSION

There were a total of 5393 deliveries from January 2017 to December 2017. The total number of cases with antepartum hemorrhage was 131making the incidence to 2.4%.

The total numbers of cases with placenta previa were 59 and with abruption placenta were 70.

There was 1 case with antepartum hemorrhage of unknown origin and one case with a cervical polyp.

The incidence of placenta previa in the current study was 1.09%.

Among the cases with placenta previa, 35 (59.3%) cases were registered in our hospital and 24 (40.7 %) cases were registered outside. 74.6% cases with placenta previa were multigravida and 25.4% cases were primigravida, suggesting placenta previa is more common in multigravida.

Most patients i.e. 81.4% with placenta previa were in the age group of 21to 30 years. 6 patients were above the age of 30 years and 5 patients were below the age of 20 years. 49.2% patients who came to the hospital first time with diagnosis of placenta previa were in the gestational age of 33-37 weeks. 37.3% were in the gestaional age of 28 to 32 weeks and 10.2% cases were less than 28 weeks and 3.3 % were more than 37 weeks. 35.7% of the cases belonged to Type 4 of placenta previa according to Browne’s classification.

Most of the patients presented with bleeding per vagina i.e in 49.2%. 11 cases came with no symptoms or signs. 8 cases came with hemorrhagic shock. All the patients with placenta previa underwent LSCS.

69.5% of the patients had anemia.

There was a significant association between major placenta previa and anemia. 82.9% cases among the patients with major placenta previa had anemia. 45.8% cases were with previous history of placenta previa – 20 cases with major type of placenta previa and 7 cases with minor type. 13.6% cases had previous history of dilation and curettage. 8 cases with major placenta pevia had history of D and C, which was statistically significant.

4 cases with major placenta previa had previous history of antepartum haemorrhage 19 cases with placenta previa were also diagnosed with pre eclampsia. There was no significant association between type of placenta previa and pre eclampsia

10 cases with placenta previa had postpartum haemorrhage. All these 10 cases had major type of placenta previa. 3 cases needed peripartum hysterectomy. Peripartum hysterectomies were indicated due to uncontrolled bleeding from the placenta bed, atonic PPH and morbidly adherent placenta. 7 cases with major placenta previa had DIC. There were 7 perinatal mortalities among cases with major placenta previa

4 cases with major placenta previa presented with intra uterine fetal demise

Among the cases with abruption placenta ,27 cases (38.6%) were registered with in our hospital, while a major number of cases i.e. 43(61.4%) were registered outside.

40(51.2%) patients who presented with abruption placenta were multigravidas and 30 (42.8%) were primigravida suggesting that multigravidas are more prone to abruption placenta.

50 cases were between the age group of 21 – 30 years, 8 cases were less than 20 years and 12 were more than 30 years. 80% cases with abruption placenta were in the gestational age between 33 – 37 weeks. 9 cases were between the gestational age more than 37 weeks. 50 (71.4%) cases with abruption placenta were revealed type, 17(24.2%) cases were concealed type and 3 cases were mixed type.

Most common mode of presentation was pain along with vaginal bleeding (50%). 13 patients came with complain of only pain and 18 with vaginal bleeding. 4 patients came in hemorrhagic shock. Most common mode of delivery was by LSCS in 47(65.7%) patients. Vaginal delivery was in 24 patients.

70% of the cases with abruption placenta had anemia. 40 cases with revealed abruption had anemia, 6 cases with concealed abruption and all the cases with mixed type of abruption had anemia

20% cases with abruption placenta had gestational hypertension. Majority of the cases with abruption placenta i.e. 64.3% had pre eclampsia. Pre eclampsia was seen in 38 cases with revealed type of abruption placenta, 4 cases with concealed type and all the cases with mixed type of abruption placenta.

11 cases with abruption placenta had history of previous LSCS. 9 of these cases were with revealed type of abruption and 2 cases were with concealed type. 75.7% patients with diagnosis of abruption placenta needed transfusion of blood and blood products. 41 among them were with revealed type, 9 with concealed type and 3 with mixed type.

22 patients had Disseminated intravascular coagulopathy. All these patients needed blood and blood products. 30 babies needed NICU admission. The most common cause for NICU admission was respiratory distress

SUMMARY

Antepartum haemorrhage is one of the most prevalent emergencies in obstetrics occurring at an incidence of 0.5-5% [(18)]. It is a grave obstetrical emergency and is a leading cause of maternal and perinatal mortality and morbidity. It complicates about 2-5% of all the pregnancies.

The objective of this study was to determine the maternal and fetal outcomes associated with ante partum haemorrhage.

This study was conducted at KLE Dr. Prabhakar Kore Charitable Hospital & Medical Research Centre, Belagavi. A total of 5393 women delivered from January 2017 to December 2017. 131 pregnancies complicated by ante partum haemorrhage were include in this study.

70 patients had abruptio placenta. Maximum of these cases were registered outside. 71.4% had revealed type of abruption and 24.2% had concealed type. The most common associated factor was found to be anemia observed on 70% and pre eclampsia observed on 64.3% of the cases. The other factors associated were history of abruption in previous pregnancies, gestation al hypertension and eclampsia.

19 cases had postpartum haemorrhage. All of these cases needed blood and blood products. 2 patients needed peripartum hysterectomty.

25 patients had come with intra uterine fetal demise at admission. There were 6 perinatal mortalities. 30 babies needed NICU admission.

59 patients had placenta previa. Maximum patients were type 4 and type 3 of placenta previa according to F.J. Browne’s classification. Anemia was observed in 69.5% of the cases with placenta previa. 27 cases had history of previous LSCS.

Other associated factors were history of placenta previa in previous pregnancies, history of dilatation and curettage.

10 cases had postpartum hemorrhage. There were 3 peripartum hysterectomies: for atonic PPH, uncontrolled bleeding from placental bed and morbidly adherent placenta.

31 babies needed NICU admission.

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2017

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ANNEXURE I – ETHICAL CLEARANCE CERTIFICATE

K.L.E.UNIVERSITY'S
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
(Accredited 'A' Grade by NAAC)

Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu

Phone: (+ 91-(0)831 Office : 2471350
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 94 **Date: 17/10/2016**

To,

Dr.
PG student in Obstetrics and Gynaecology,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"A ONE YEAR CROSS SECTIONAL STUDY OF ANTEPARTUM HEMORRHAGE AND ITS ASSOCIATION WITH MATERNAL AND PERINATAL OUTCOME AT KLES DR PRABHAKAR KORE CHARITABLE HOSPITAL, BELGAUM"**, does not involve any ethical issues, as they are not directly concerned with human subjects. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Ganga Pilli)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

ANNEXURE I – CONSENT FORM

From,
Dr.
Post Graduate,
Department of Obstetrics And Gynaecology ,
J. N. Medical College, Belgaum.

To,
DR. GANGA PILLI,
Chairman,
J.N.M.C Ethical Committee for Human Research,
KLE University,
Belgaum-590010.

(Through Proper Channel)
Subject :Waiver of consent for the study .

Respected Sir,

I Dr. , Post Graduate in the Department of Obstetrics And Gynaecology, hereby inform you that I am submitting my dissertation synopsis.

My topic is**A ONE YEAR CROSS SECTIONAL STUDY OF ANTEPARTUM HAEMORRHAGE AND ITS ASSOCIATION WITH MATERNAL AND PERINATAL OUTCOME AT KLES DR PRABHAKAR KORE CHARITABLE AND TEACHING HOSPITAL, BELGAUM** a project wherein I am not going to come in direct contact with the patients as I am going to get all my study material from the Medical records. Hence , I am not going to need any consent form.

Kindly grant me permission to do this study.

Thanking you,

Yours faithfully,

Guide :
Dr.
Professor,
Department of Obstetrics And Gynaecology,
J.N. Medical College, Belgaum.

ANNEXURE I – PROFORMA

"MATERNAL AND PERINATAL OUTCOME IN ANTEPARTUM HAEMORRHAGE AT KAHER – A ONE YEAR HOSPITAL BASED STUDY"

IP.NO:

1. SUBJECT INFORMATION

- NAME
- AGE :
- ADDRESS :
- BOOKED/UNBOOKED:

2. CURRENT PREGNANCY

- GRAVIDA PARA LIVING ABORTION

3. PERIOD OF GESTATION

4. TYPE OH HAEMORRHAGE

- Abruption placenta
- Placenta previa
- Undetermined haemorrhage

ABRUPTIO PLACENTA:

1) MODE OF PRESENTATION

   A) PER VAGINAL BLEEDING

   B) PAIN ABDOMEN

   C) NOT APPRECIATING FETAL MOVEMENTS

   D) SHOCK

   E) DIC

2) TYPE OF ABRUPTION : 1. CONCEALED

   2.REVEALED

   3.MIXED

3) CLASSIFICATION ACCORDING TO PAGES CLASSIFICATION

GRADE		BLOOD LOSS	
0			
1			
2			
3			

4) ASSOCIATED FACTORS

1. Pregnancy induced hypertension
2. Anemia
3. Pre Eclampsia
4. Eclampsia
5. multiple pregnancy
6. previous lscs
7. IUGR
8. Prev history of APH
9. Prev D and C
10. Preterm labor

5) BLOOD TRANSFUION :

BLOOD PRODUCT	NUMBER	
1. WHOLE BLOOD		
2. PCV		
3. RDP		
4. SDP		
5. CRYO		

6) MODE OF DELIVERY : 1.VAGINAL

2. CESAREAN SECTION

7) COURSE OF VAGINAL DELIVERIES :

1. Spontaneous
2. ARM
3. ARM + Oxytocin
4. Misoprostol induction

8) COMPLICATIONS

1) Post partum haemorrhage

i. Medical management

ii. B lynch sutures

iii. Haymanns sutues

iv. Internal artery ligation

2) Peripartum hysterectomy

3) Puerperal pyrexia

4) DIC

5) Renal failure

6) Sepsis

7) Couvelaire Uterus

8)Maternal Mortality

9) TIME FROM ADMISSION TO DELIVERY:

10) PERINATAL OUTCOME:

a) term / preterm

b) gestational age

c) IUD at admission

d) FSB

e) birth weight :

f) NICU Admission :

g) APGAR score: 1 min- 5 min-

h) Cause of NICU admission:

1. respiratoty distress
2. low birth weight
3. congenital anomaly
4. convulsions

i) condition of baby at discharge :stable/ unstable

j) if baby died, cause of death

1. prematurity
2. low birth weight
3. sepsis
4. birth asphyxia
5. congenital anomaly

PLACENTA PREVIA :

4) MODE OF PRESENTATION
   F) PER VAGINAL BLEEDING
   G) PAIN ABDOMEN
   H) NOT APPRECIATING FETAL MOVEMENTS
   I) SHOCK
   J) DIC
   K) ELECTIVE TERMINATION OF PREGNANCY

5) TYPE OF PLACENTA PREVIA :
   A) MAJOR
   B) MINOR

6) MANAGEMENT :
   A) EXPECTANT
   B) TERMINATION OF PREGNANCY :
      i) Immediate

      ii) after giving expectant management

time	
1. <24 hours	
2. 24 – 48 hours	
3. 48 – 72 hours	

4) 4) ASSOCIATED FACTORS

11. Gestational hypertension
12. Anemia
13. Pre Eclampsia
14. Eclampsia
15. multiple pregnancy
16. previous lscs

17. IUGR
18. Prev history of APH
19. Prev D and C
10.Preterm labor

5) BLOOD TRANSFUION:

BLOOD PRODUCT WHOLE BLOOD	NUMBER	
PCV		
RDP		
SDP		
CRYO		

6) MODE OF DELIVERY: 1. VAGINAL

2. CESAREAN SECTION

7) COMPLICATIONS

2) Post partum haemorrhage

v. Medical management
vi. B lynch sutures
vii. Haymanns sutues
viii. Internal artery ligation

2) Peripartum hysterectomy

3) Puerperal pyrexia

4) DIC

5) Renal failure

6) Sepsis

7) Couvelaire Uterus

8)Maternal Mortality

8) PERINATAL OUTCOME:

a) term / preterm

b) gestational age

c) IUD at admission

d) FSB

e) birth weight :

f) NICU Admission :

g) APGAR score

1 min- 5 min-

h) Cause of NICU admission:

5. respiratoty distress
6. low birth weight
7. congenital anomaly
8. convulsions

i) condition of baby at discharge :stable/ unstable

j) if baby died, cause of death

6. prematurity
7. low birth weight
8. sepsis
9. birth asphyxia
10. congenital anomaly

KEY TO MASTER CHART

CS	-	CESREAN DELIVERY
VD	–	VAGINAL DELIVERY
VB	–	VAGINAL BLEEDING
S	–	SHOCK
P	–	PAIN
T	–	TENDERNESS
R	–	REVEALED ABRUPTIO PLACENTA
M	–	MIXED ABRUPTIO PLACENTA
C	–	CONCEALED ABRUPTIO PLACENTA
POG	–	PERIOD OF GESTATION
MJ	–	MAJOR PLACENTA PREVIA
MN	–	MINOR PLACENTA PREVIA

S.N.	IP NUMBER	AGE	REGISTERED	PARITY	POG	MODE OF DELIVERY	MODE OF PRESENTATION	TYPE OF ABRUPTION	PAGES CLASSIFICATION	GESTATIONAL HTN	ANEMIA	PREECLAMSIA	ECLAMPSIA	MULTIPLE PREGNANCY	PREV LSCS	IUGR	PREV APH	PREV D AND C	PRETERM LABOR	BLOOD PRODUCT	PPH	HYSTERECTOMY	PUERPERAL SEPSIS	PYREXIA	DIC	RENAL FAILUE	SEPSIS	COUVELAIRE UTERUS	MORTALITY	TIME	BIRTH WEIGHT	FSB	IUD AT ADMISSION	NICU	APGAR 1 MIN	5 MIN	CAUSE OF NICU
1	783450	28	YES	PRIMI	38	CS	VB+P+T	R	1	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	3.02	NO	NO	NO	7	8	
2	781189	25	YES	G2P1L1	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	NO	YES	NO	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	6	2.4	NO	YES	NO	0	0	
3	783066	26	NO	G2P1L1	37	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2.06	NO	YES	NO	0	0	
4	782617	25	NO	PRIMI	36	CS	VB	R	0	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	5	2.12	NO	NO	YES	5	8	PR/ RD
5	782618	37	NO	PRIMI	36	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.5	NO	NO	NO	7	8	NO
6	784395	28	NO	G3P1L1A1	36	CS	VB+P+T	R	1	NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	1	2	NO	NO	YES	5	6	RD
7	784065	28	NO	G3P1L1A1	35	VD	VB+P+T	M	3	NO	YES	YES	NO	NO	YES	NO	YES	YES	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	6	2	NO	YES	NO	0	0	
8	782150	31	NO	G3P1L1A1	36	CS	VB	R	1	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.7	NO	NO	NO	7	8	
9	780539	22	YES	PRIMI	31	CS	VB	R	1	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.5	NO	NO	YES	5	6	RD
10	785742	20	NO	G2P1L1	38	CS	VB	R	2	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1	1.9	NO	NO	YES	5	6	PR/RD
11	785019	19	YES	PRIMI	36	VD	VB	R	1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	1	2.5	NO	NO	NO	6	7	
12	785020	25	NO	G2P1L1	37	CS	VB	R	1	NO	YES	YES	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.4	NO	NO	YES	5	5	RD
13	785021	25	NO	G2A1	37	VD	P	C	3	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	3	2.9	NO	YES	NO	0	0	
14	785022	18	YES	PRIMI	32	CS	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	3	NO	NO	NO	6	8	
15	797067	25	NO	G3P2L2	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES	YES	YES	NO	NO	YES	NO	NO	YES	NO	3	1.5	YES	YES	NO	0	0	
16	793057	20	YES	G2P1L1	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	4	1.8	NO	YES	NO	0	0	
18	793666	28	NO	PRIMI	33	VD	VB+P+T	R	3	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	3	2.8	NO	YES	NO	0	0	
20	791851	25	NO	PRIMI	34	CS	VB+P+T	R	1	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2.5	NO	NO	YES	6	7	
21	791852	20	YES	G2P1L1	33	CS	VB+P+T	R	2	NO	YES	YES	NO	NO	YES	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	1.6	YES	NO	YES	2	3	RD/PR
22	791853	23	YES	G3P1L1A1	35	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	6	2.2	NO	NO	YES	5	6	RD/PR
23	791854	28	YES	G2P1L1	37	VD	P	C	0	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	6	2	NO	NO	YES	6	7	RD/PR
24	806902	33	NO	PRIMI	37	CS	VB+P+T	R	3	NO	YES	YES	YES	YES	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	YES	NO	3	3	NO	YES	NO	0	0	
25	806517	30	NO	PRIMI	37	CS	VB+P+T	R	2	NO	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	YES	NO	3	3.5	YES	NO	YES	4	5	RD
26	802651	24	YES	G2P1L1	35	CS	VB+P	R	1	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	3	2.4	NO	NO	YES	6	7	RD
27	808408	22	YES	G2P1L1	36	CS	VB	R	2	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	9	2.6	NO	NO	YES	4	5	RD

S.N.	IP NUMBER	AGE	REGISTERED	PARITY	POG	MODE OF DELIVERY	MODE OF PRESENTATION	TYPE OF ABRUPTION	PAGES CLASSIFICATION	GESTATIONAL HTN	ANEMIA	PREECLAMSIA	ECLAMPSIA	MULTIPLE PREGNANCY	PREV LSCS	IUGR	PREV APH	PREV D AND C	PRETERM LABOR	BLOOD PRODUCT	PPH	HYSTERECTOMY	PUERPERAL SEPSIS	PYREXIA	DIC	RENAL FAILUE	SEPSIS	COUVELAIRE UTERUS	MORTALITY	TIME	BIRTH WEIGHT	FSB	IUD AT ADMISSION	NICU	APGAR 1 MIN	5 MIN	CAUSE OF NICU
28	808441	30	NO	PRIMI	37	VD	VB+P+T	R	3	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	5	2.7	NO	YES	NO	0	0	
29	805428	34	NO	G2A1	36	VD	VB+P+T	R	3	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	YES	NO	6	2.3	NO	YES	NO	0	0	
30	807002	26	NO	G2P1L1	39	CS	S+ P	C	3	NO	YES	YES	NO	NO	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	YES	NO	6	3.2	NO	YES	NO	0	0	
32	807855	26	NO	PRIMI	34	VD	S+ P	C	3	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	6	2.1	NO	NO	NO	0	0	
33	808219	21	YES	PRIMI	37	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2	NO	NO	YES	6	7	RD/PR
34	802338	32	YES	PRIMI	38	CS	VB+P+T	R	1	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	3.02	NO	NO	NO	7	8	
35	806517	30	YES	G2P1L1	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	NO	YES	NO	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	6	2.4	NO	YES	NO	0	0	
36	816292	28	NO	G2P1L1	37	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2.06	NO	YES	NO	0	0	
38	816068	24	NO	PRIMI	36	CS	VB	R	0	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	5	2.12	NO	NO	YES	5	8	PR/ RD
39	819378	28	NO	PRIMI	36	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.5	NO	NO	NO	7	8	NO
40	819368	34	NO	G3P1L1A1	36	CS	VB+P+T	R	1	NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	1	2	NO	NO	YES	5	6	RD
41	818321	28	NO	G3P1L1A1	35	VD	VB+P+T	M	3	NO	YES	YES	NO	NO	YES	NO	YES	YES	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	6	2	NO	YES	NO	0	0	
42	817928	31	NO	G3P1L1A1	36	CS	VB	R	1	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.7	NO	NO	NO	7	8	
43	816747	25	YES	PRIMI	31	CS	VB	R	1	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.5	NO	NO	YES	5	6	RD
44	816729	28	NO	G2P1L1	38	CS	VB	R	2	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1	1.9	NO	NO	YES	5	6	PR/RD
45	815824	25	YES	PRIMI	36	VD	VB	R	1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	1	2.5	NO	NO	NO	6	7	
46	815825	27	NO	G2P1L1	37	CS	VB	R	1	NO	YES	YES	NO	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.4	NO	NO	YES	5	5	RD
47	815826	20	NO	G2A1	37	VD	P	C	3	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	3	2.9	NO	YES	NO	0	0	
48	815827	25	YES	PRIMI	32	CS	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	3	NO	NO	NO	6	8	
49	832039	34	NO	G3P2L2	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES	YES	YES	NO	NO	YES	NO	NO	YES	NO	3	1.5	YES	YES	NO	0	0	
50	831723	20	YES	G2P1L1	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	4	1.8	NO	YES	NO	0	0	
52	831097	28	NO	PRIMI	33	VD	VB+P+T	R	3	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	3	2.8	NO	YES	NO	0	0	
53	831323	19	NO	PRIMI	34	CS	VB+P+T	R	1	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2.5	NO	NO	YES	6	7	
54	831034	31	YES	G2P1L1	33	CS	VB+P+T	R	2	NO	YES	YES	NO	NO	YES	YES	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	1.6	YES	NO	YES	2	3	RD/PR
55	831055	30	YES	G3P1L1A1	35	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	6	2.2	NO	NO	YES	5	6	RD/PR

S.N.	IP NUMBER	AGE	REGISTERED	PARITY	POG	MODE OF DELIVERY	MODE OF PRESENTATION	TYPE OF ABRUPTION	PAGES CLASSIFICATION	GESTATIONAL HTN	ANEMIA	PREECLAMSIA	ECLAMPSIA	MULTIPLE PREGNANCY	PREV LSCS	IUGR	PREV APH	PREV D AND C	PRETERM LABOR	BLOOD PRODUCT	PPH	HYSTERECTOMY	PUERPERAL SEPSIS	PYREXIA	DIC	RENAL FAILUE	SEPSIS	COUVELAIRE UTERUS	MORTALITY	TIME	BIRTH WEIGHT	FSB	IUD AT ADMISSION	NICU	APGAR 1 MIN	5 MIN	CAUSE OF NICU
56	831861	28	YES	G2P1L1	37	VD	P	C	0	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	6	2	NO	NO	YES	6	7	RD/PR
57	828277	21	NO	PRIMI	37	CS	VB+P+T	R	3	NO	YES	YES	YES	YES	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	YES	NO	3	3	NO	YES	NO	0	0	
58	827614	27	NO	PRIMI	37	CS	VB+P+T	R	2	NO	YES	YES	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	YES	NO	3	3.5	YES	NO	YES	4	5	RD
59	826739	34	YES	G2P1L1	35	CS	VB+P	R	1	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	3	2.4	NO	NO	YES	6	7	RD
61	826802	28	YES	G2P1L1	36	CS	VB	R	2	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	9	2.6	NO	NO	YES	4	5	RD
62	825943	24	NO	PRIMI	37	VD	VB+P+T	R	3	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	5	2.7	NO	YES	NO	0	0	
63	825799	27	NO	G2A1	36	VD	VB+P+T	R	3	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	YES	NO	6	2.3	NO	YES	NO	0	0	
64	826098	28	NO	G2P1L1	39	CS	S+ P	C	3	NO	YES	YES	NO	NO	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	YES	NO	6	3.2	NO	YES	NO	0	0	
65	838472	32	NO	PRIMI	34	VD	S+ P	C	3	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	6	2.1	NO	NO	NO	0	0	
67	838856	25	YES	PRIMI	37	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2	NO	NO	YES	6	7	RD/PR
68	839548	23	YES	PRIMI	38	CS	VB+P+T	R	1	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	3.02	NO	NO	NO	7	8	
69	839778	29	YES	G2P1L1	35	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	NO	YES	NO	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	6	2.4	NO	YES	NO	0	0	
70	831700	35	NO	G2P1L1	37	CS	VB+P+T	R	3	NO	YES	YES	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	4	2.06	NO	YES	NO	0	0	
71	840459	24	NO	PRIMI	36	CS	VB	R	0	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	5	2.12	NO	NO	YES	5	8	PR/ RD
72	839566	25	NO	PRIMI	36	VD	P	C	0	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.5	NO	NO	NO	7	8	NO
73	839567	26	NO	G3P1L1A1	36	CS	VB+P+T	R	1	NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	1	2	NO	NO	YES	5	6	RD
74	787827	24	NO	G3P1L1A1	35	VD	VB+P+T	M	3	NO	YES	YES	NO	NO	YES	NO	YES	YES	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	6	2	NO	YES	NO	0	0	
75	790197	26	NO	G3P1L1A1	36	CS	VB	R	1	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.7	NO	NO	NO	7	8	
76	788160	28	YES	PRIMI	31	CS	VB	R	1	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	2.5	NO	NO	YES	5	6	RD
78	790474	24	NO	G2P1L1	38	CS	VB	R	2	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1	1.9	NO	NO	YES	5	6	PR/RD

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S.N.	IP NUMBER	AGE	REGISTERED	PARITY	POG	GA AT DELIVERY	MODE OF DELIVERY	EMG	ELECVTIVE	MODE OF PRESENTATION	DEL AFTER EXPECTANT	DEL IMMEDIATE	EXPECTANT	TYPE	TYPE OF PLACENTA PREVIA	GESTATIONAL HTN	ANEMIA	PREECLAMSIA	ECLAMPSIA	MULTIPLE PREGNANCY	PREV LSCS	IUGR	PREV APH	PREV D AND C	PRETERM LABOR	BLOOD PRODUCT	PPH	HYSTERECTOMY	PUERPERAL SEPSIS	PYREXIA	DIC	RENAL FAILUE	SEPSIS	MORTALITY	BIRTH WEIGHT	FSB	IUD AT ADMISSION	NICU	APGAR 1 MIN	5 MIN	CAUSE OF NICU	
1	787827	24	YES	G3P2L2	32	32	LSCS	YES	NO	VB+P	NO	YES	NO	3	MJ	NO	YES	NO	NO	NO	YES	YES	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.7	NO	NO	YES	5	6	RD/PR	
2	790197	26	YES	G7P5L4	34	34	LSCS	YES	NO	VB	2	NO	NO	3	MJ	YES	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.9	NO	NO	YES	6	7	RD/PR	
3	788160	28	NO	PRIMI	37	37	LSCS	YES	NO	VB+P	NO	YES	NO	1	MN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	NO	6	8	NO	
4	790474	24	YES	G2P1L1	27	38	LSCS	NO	YES	VB	NO	NO	YES	4	MJ	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.3	NO	NO	YES	7	8	LBW	
5	790560	23	YES	G2P1L1	35	35	LSCS	YES	NO	VB	3	NO	NO	4	MJ	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	2.4	NO	NO	NO	7	8	NO	BLEEDING FROM PLACENTAL BED
6	788935	23	NO	PRIMI	37	37	LSCS	YES	NO	VB+P	NO	YES	NO	2	MN	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	YES	5	6	RD	
7	787508	26	YES	G3P1L1A1	29	37	LSCS	NO	YES	VB	NO	NO	YES	4	MJ	YES	YES	NO	NO	NO	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.7	NO	NO	NO	7	8	NO	
8	787512	24	NO	G5P2L2A1	32	32	LSCS	YES	NO	VB+P	NO	YES	NO	4	MJ	NO	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.3, 1.6	NO	NO	YES	5,7	6,8	LBW/RD	
9	787513	20	YES	G2P1L1	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	1	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.8	NO	NO	NO	7	8	NO	
10	786646	23	NO	G4P3L3	28	37	LSCS	NO	YES	VB	NO	NO	YES	4	MJ	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.2	NO	NO	YES	7	8	LBW	
11	786427	30	YES	PRIMI	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	NO	7	8	NO	
12	799301	22	YES	G2P1L1	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	4	MJ	NO	NO	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.2	NO	NO	YES	6	7	LBW	
13	799957	30	NO	G3P1L1A1	33	34	LSCS	YES	NO	VB	2	NO	NO	3	MJ	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.9	NO	NO	YES	5	6	RD/PR	
14	798791	24	NO	G4P3L3	30	30	LSCS	YES	NO	VB	2	NO	NO	3	MJ	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	NO	NO	YES	5	6	RD/PR	
15	798811	22	NO	G4P3L3	32	32	LSCS	YES	NO	VB+S	NO	YES	NO	4	MJ	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	2	NO	YES	NO	0	0		
16	798608	24	NO	PRMI	29	29	LSCS	YES	NO	VB+S	NO	YES	NO	4	MJ	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.1	YES	NO	YES	4	5	RD/PR	
18	807039	25	YES	G2P1L0	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.7	NO	NO	NO	7	8	NO	
20	802312	28	YES	G2P1L1	35	36	LSCS	YES	NO	VB	2	NO	NO	3	MJ	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	YES	YES	YES	NO	NO	NO	2.3	NO	NO	YES	6	7	LBW	
21	800149	30	YES	PRIMI	29	37	LSCS	NO	YES	VB	NO	NO	YES	2	MN	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	2.8	NO	NO	NO	7	8	NO	
22	801752	29	NO	G3P1L1A1	27	37	LSCS	NO	YES	VB	NO	NO	YES	3	MJ	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	3	NO	NO	NO	7	8	NO	
23	801800	22	YES	G4P3L3	28	28	LSCS	YES	NO	VB	3	NO	NO	3	MJ	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	900	YES	NO	YES	5	6	PR/RD/LBW	
24	801801	22	YES	G3P2L1	38	38	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.9	NO	NO	NO	6	7	NO	
25	806902	33	NO	G2P1L1	34	34	LSCS	YES	NO	VB+S	NO	YES	NO	3	MJ	NO	YES	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	NO	NO	YES	YES	NO	NO	1.1	NO	YES	NO	0	0	NO	
26	806517	30	NO	G2P1L0	28	28	LSCS	YES	NO	VB+S	NO	YES	NO	3	MJ	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	900	YES	NO	YES	4	5	PR/RD/LBW	
27	802651	24	YES	PRIMI	30	30	LSCS	YES	NO	VB+P	NO	YES	NO	4	MJ	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.1	NO	NO	YES	5	6	RD/PR	
28	808408	22	YES	G3P2L1	33	33	LSCS	YES	NO	VB	2	NO	NO	4	MJ	NO	YES	YES	NO	NO	YES	YES	NO	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	1.2	NO	NO	YES	5	6	RD/PR	
29	808441	30	YES	PRIMI	34	37	LSCS	NO	YES	VB	NO	NO	YES	2	MN	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	NO	7	8	NO	
30	805428	34	YES	G3P2L2	32	32	LSCS	YES	NO	VB+P	NO	YES	NO	3	MJ	NO	YES	NO	NO	NO	YES	YES	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.7	NO	NO	YES	5	6	RD/PR	
32	807002	26	YES	G7P5L4	34	34	LSCS	YES	NO	VB	2	NO	NO	3	MJ	YES	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.9	NO	NO	YES	6	7	RD/PR	
33	807855	26	NO	PRIMI	37	37	LSCS	YES	NO	VB+P	NO	YES	NO	1	MN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	NO	6	8	NO	
34	808219	21	YES	G2P1L1	27	38	LSCS	NO	YES	VB	NO	NO	YES	4	MJ	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.3	NO	NO	YES	7	8	LBW	
35	802312	28	YES	G2P1L1	35	35	LSCS	YES	NO	VB	3	NO	NO	4	MJ	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	2.4	NO	NO	NO	7	8	NO	ATONIC PPH
36	800149	30	NO	PRIMI	37	37	LSCS	YES	NO	VB+P	NO	YES	NO	2	MN	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	YES	5	6	RD	
38	821825	27	YES	G3P1L1A1	29	37	LSCS	NO	YES	VB	NO	NO	YES	4	MJ	YES	YES	NO	NO	NO	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.7	NO	NO	NO	7	8	NO	
39	823534	32	NO	G5P2L2A1	32	32	LSCS	YES	NO	VB+P	NO	YES	NO	4	MJ	NO	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.3, 1.6	NO	NO	YES	5,7	6,8	LBW/RD	
40	822413	31	YES	G2P1L1	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	1	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.8	NO	NO	NO	7	8	NO	
41	821120	20	NO	G4P3L3	28	37	LSCS	NO	YES	VB	NO	NO	YES	4	MJ	NO	YES	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.2	NO	NO	YES	7	8	LBW	
42	820296	20	YES	PRIMI	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	NO	7	8	NO	
43	821139	21	YES	G2P1L1	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	4	MJ	NO	NO	YES	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.2	NO	NO	YES	6	7	LBW	
44	821125	24	NO	G3P1L1A1	33	34	LSCS	YES	NO	VB	2	NO	NO	3	MJ	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.9	NO	NO	YES	5	6	RD/PR	
45	825125	23	NO	G4P3L3	30	30	LSCS	YES	NO	VB	2	NO	NO	3	MJ	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2	NO	NO	YES	5	6	RD/PR	
46	825569	30	NO	G4P3L3	32	32	LSCS	YES	NO	VB+S	NO	YES	NO	4	MJ	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	2	NO	YES	NO	0	0		
47	825570	23	NO	PRMI	29	29	LSCS	YES	NO	VB+S	NO	YES	NO	4	MJ	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	1.1	YES	NO	YES	4	5	RD/PR	
48	825571	23	YES	G2P1L0	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.7	NO	NO	NO	7	8	NO	
49	833426	29	YES	G2P1L1	35	36	LSCS	YES	NO	VB	2	NO	NO	3	MJ	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	YES	YES	YES	NO	NO	NO	2.3	NO	NO	YES	6	7	LBW	
50	833978	22	YES	PRIMI	29	37	LSCS	NO	YES	VB	NO	NO	YES	2	MN	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	2.8	NO	NO	NO	7	8	NO	
52	832163	26	NO	G3P1L1A1	27	37	LSCS	NO	YES	VB	NO	NO	YES	3	MJ	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	3	NO	NO	NO	7	8	NO	
53	823146	21	YES	G4P3L3	28	28	LSCS	YES	NO	VB	3	NO	NO	3	MJ	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	900	YES	NO	YES	5	6	PR/RD/LBW	
54	835700	30	YES	G3P2L1	38	38	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.9	NO	NO	NO	6	7	NO	

S.N.	IP NUMBER	AGE	REGISTERED	PARITY	POG	GA AT DELIVERY	MODE OF DELIVERY	EMG	ELECVTIVE	MODE OF PRESENTATION	DEL AFTER EXPECTANT	DEL IMMEDIATE	EXPECTANT	TYPE	TYPE OF PLACENTA PREVIA	GESTATIONAL HTN	ANEMIA	PREECLAMSIA	ECLAMPSIA	MULTIPLE PREGNANCY	PREV LSCS	IUGR	PREV APH	PREV D AND C	PRETERM LABOR	BLOOD PRODUCT	PPH	HYSTERECTOMY	PUERPERAL SEPSIS	PYREXIA	DIC	RENAL FAILUE	SEPSIS	MORTALITY	BIRTH WEIGHT	FSB	IUD AT ADMISSION	NICU	APGAR 1 MIN	5 MIN	CAUSE OF NICU	
55	836031	24	NO	G2P1L1	34	34	LSCS	YES	NO	VB+S	NO	YES	NO	3	MJ	NO	YES	NO	NO	NO	YES	YES	NO	NO	NO	YES	NO	NO	NO	YES	YES	NO	NO	1.1	NO	YES	NO	0	0	NO	
56	836111	19	NO	G2P1L0	28	28	LSCS	YES	NO	VB+S	NO	YES	NO	3	MJ	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	900	YES	NO	YES	4	5	PR/RD/LBW	
57	836911	22	YES	PRIMI	30	30	LSCS	YES	NO	VB+P	NO	YES	NO	4	MJ	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	1.1	NO	NO	YES	5	6	RD/PR	
58	837499	32	YES	G3P2L1	33	33	LSCS	YES	NO	VB	2	NO	NO	4	MJ	NO	YES	YES	NO	NO	YES	YES	NO	YES	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	1.2	NO	NO	YES	5	6	RD/PR	
59	837808	27	YES	PRIMI	34	37	LSCS	NO	YES	VB	NO	NO	YES	2	MN	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.6	NO	NO	NO	7	8	NO	
61	837809	18	NO	G2P1L1	35	35	LSCS	YES	NO	VB+P	NO	NO	NO	4	MJ	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	2.2	YES	NO	NO	5	6	RD/PR	ADHERENT PLACENTA
62	837810	26	YES	G2P1L0	37	37	LSCS	NO	YES	ELECTIVE	NO	NO	NO	2	MN	YES	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	2.7	NO	NO	NO	7	8	NO	
63	843831	25	YES	G2P1L1	35	36	LSCS	YES	NO	VB	2	NO	NO	3	MJ	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO	YES	YES	YES	NO	NO	NO	2.3	NO	NO	YES	6	7	LBW	
64	843621	24	YES	PRIMI	29	37	LSCS	NO	YES	VB	NO	NO	YES	2	MN	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	2.8	NO	NO	NO	7	8	NO	
65	844331	34	NO	G3P1L1A1	27	37	LSCS	NO	YES	VB	NO	NO	YES	3	MJ	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	3	NO	NO	NO	7	8	NO	

S.N.
IP NUMBER
AGE
REGISTERED
PARITY
POG
GA AT DELIVERY
MODE OF DELIVERY
EMG
ELECVTIVE
MODE OF PRESENTATION
DEL AFTER EXPECTANT
DEL IMMEDIATE
EXPECTANT
TYPE
TYPE OF PLACENTA PREVIA
GESTATIONAL HTN
ANEMIA
PREECLAMSIA
ECLAMPSIA
MULTIPLE PREGNANCY
PREV LSCS
IUGR
PREV APH
PREV D AND C
PRETERM LABOR
BLOOD PRODUCT
PPH
HYSTERECTOMY
PUERPERAL SEPSIS
PYREXIA
DIC
RENAL FAILUE
SEPSIS
MORTALITY
BIRTH WEIGHT
FSB
IUD AT ADMISSION
NICU
APGAR 1 MIN
5 MIN
CAUSE OF NICU

S.N.
IP NUMBER
AGE
REGISTERED
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POG
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MORTALITY
BIRTH WEIGHT
FSB
IUD AT ADMISSION
NICU
APGAR 1 MIN
5 MIN
CAUSE OF NICU