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Clinical study of risk factors, maternal and perinatal outcome in cases of abruptio placentae at tertiary care center, Andhra pradesh

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ABSTRACT: Aim: To determine risk factors, clinical presentation, maternal and perinatal outcome in cases of abruptio placenta.
Study Design: A Prospective observation studyStudy
Place and Duration of Study: Department of Obstetrics and Gynaecology, Government General Hospital, Siddhartha Medical College, Vijayawada between April 2019 and April 2020.
Materials and Methods: 72 cases of Abruptio Placentae after 20weeks of gestation whose diagnosis is confirmed clinically, by ultrasound and or by retrospectively by retroplacental clots following delivery are included in the study. Women with placenta previa, coagulation disorders, lower genital tract lesions, genital tract trauma are excluded from study. The results are presented as percentages, rates and proportions.
Results: A total of 72 cases of abruptio placenta were seen out of 8845 deliveries.
Incidence of 1.46% was observed. High parity, unbooked status, low socioeconomic status was significantly associated with abruptio placenta. Hypertension and previous history of abruption are some of the identified risk factors. There was one maternal death giving a case fatality rate of 2.8%. There were 38 perinatal deaths giving a perinatal mortality rate of 527.7 per 1000 births.
Conclusion: Lack of antenatal care and early identifying high risk factors in pregnancy are major predisposing factors in our study. Perinatal mortality associated with abruption placenta is high.
key words: Abruptio placentae, risk factors, hypertension,

I. INTRODUCTION

Abruptio placenta is defined as a premature separation of the normally situated placenta either partially or totally after the 20th week of gestation and prior to birth [1]. The term abruption means breaking away from the mass. The reported incidence of placental abruption varies because of the different criteria used for diagnosis, averages 0.5 per cent or 1 in 200 deliveries

It accounts for about 30% of third trimester bleeding [1]. It is one of the major causes of obstetric haemorrhage - a common cause of maternal morbidity and mortality [1,2]. It is also a significant cause of perinatal loss [3].

The exact aetiology of abruptio placenta is unknown and it is multifactorial but a hypothesis suggests placental or vascular abnormalities due to failure of secondary invasion of trophoblastic villi. Abnormal placentation, vascular malformations and increased fragility of vessels predispose to haematoma formation resulting in separation of the placenta [4].

Immunological rejection - Immunological defects plays a role in the origin of placental abruption (Matthiesen et al. 1995, Steinborn et al. 2003b)[6]In placental abruption, there is no suppression of cell-mediated immunity and upregulation of humoral immunity which occurs in a normal pregnancy leading to exaggerated immune rejection of the fetus, activation of fetal monocytes and release of inflammatory agents

and results in a chain of events including shallow trophoblastic invasion, defective spiral artery remodeling, leading to placental infarctions and thrombosis [Matthiesen et al. 2005]

Although a number of risk factors are well known for placental abruption, but the actual exact cause for this remains unknown. The pathogenesis for abruptio placenta remains different for different risk factors. Risk factors can be in 3 groups based on history, risk in current pregnancy, trauma etc. Previous history of abruptio placentae [7-20 fold risk according to Karegard and Genser 1986, Ananth et al1996[7], stillbirth 3 times[8], caesarean section, Chronic hypertension,

Cigarette smoking 1.5 to 2.5[8], Drugs like cocaine, marijuana, alcohol[9,10] are analysed. Hypertensive disorders of pregnancy(Ananth et al. 1996, Ananth et al. 1997, Kramer et al. 1997, Ananth et al. 1999a, Ananth et al. 2007') Preterm Premature rupture of membranes 3.6-fold , Ananth et al. 1996, Mercer. 2003)[11], Chorioamnionitis, Preterm labour, Small for gestational age, Folic acid deficiency [Ananth et al. 2008][12]. Polyhydramnios, External cephalic version, Multifetal gestation[1 per cent to 2 per cent] Sudden uterine compression, Short umbilical cord, Uterine anomalies and tumours. Trauma to the abdomen that includes motor vehicle accidents, fall, violence resulting in a blow to the abdomen. Short stature, Snakebite, Increased MSAFP, Hyperhomocysteinemia, Acquired thrombophilia, Ascorbic acid deficiency, History of stillbirth are some of the risk factors.

The clinical hallmarks of abruption include painful vaginal bleeding accompanied by tetanic uterine contractions, uterine hypertonicity, and a non- reassuring fetal heart rate pattern [1,2].

With the improvement in medical facilities, early diagnosis by ultrasound, availability of blood and blood products, proper management of shock and DIC, good anaesthesia along with liberalisation of caesarean section, the rate of incidence of maternal morbidity and mortality is gradually on decline. Maternal peripartum risk includes obstetric haemorrhage, need for blood transfusion, disseminated intravascular coagulopathy, Obstetric hysterectomy, renal failure and even maternal death. Fetal risks are intrauterine growth restriction, low birth weight, preterm delivery, asphyxia, and perinatal death.

The bleeding can be revealed,concealed, mixed

PAGE CLASSIFICATION:**Grade 0-** clinically unrecognised before delivery and diagnosis is based on examination of the placenta

Grade 1- they show external bleeding only or mild uterine tetany but no evidence of maternal shock, FHR present.

Grade 2- uterine tetany present, and uterine tenderness also may present, with external bleeding, fetal distress or fetal death but no evidence of maternal shock.

Grade 3- maternal shock or coagulation defect, renal failure with uterine tetany and fetal demise

Different fetal cardiotocographic (CTG) patterns includes bradycardia repetitive late or variable decelerations, decreased beat-to-beat variability, or sinusoidal fetal heart rate patterns(Oyelese and Ananth. 2006)[3].

If placental abruption is suspected based on clinical symptoms, ultrasonography is performed to visualize the extent of a subchorionic or retroplacental hematomas. In some cases, placental abruption could be detected based on ultrasonographic findings even in asymptomatic patients (Oyelese and Ananth. 2006)[3].

The ultrasound examination targeted for the following seven sonographic features of abruption: 1 retroplacental collection (between placenta and myometrium) (2) marginal collection (at the placental margin) (3) preplacental collection under the chorionic plate (between the placenta and amniotic fluid)(4) subchorionic membranous collection (between the membranes and uterine wall) (5) the increased placental thickness or echogenicities (defined as greater than 4–5 cm perpendicular to the plane of the placenta throughout pregnancy) (6) "jello-like" movement of the chorionic plate along with fetal activity and intra-amniotic hematoma (collection within the amniotic fluid).

II. MATERIALS AND METHODS :

STUDY DESIGN: Prospective Observational study.

SAMPLE SIZE: The study population included all the cases of placental abruption, diagnosed and delivered at our department of Obstetrics and Gynaecology, Government General Hospital, Siddhartha Medical College, Vijayawada.

STUDY PERIOD: From April 2019 to April 2020.

INCLUSION CRITERIA: All cases of Abruptio Placentae after 20 weeks of gestation whose diagnosis is confirmed clinically or by ultrasound and or by retrospectively by retroplacental clots following delivery.

EXCLUSION CRITERIA: Women with placenta previa, lower genital tract lesions, genital tract trauma or coagulation disorders.

METHOD OF COLLECTION OF DATA-

The purpose of the study was explained to the participants. Signed consent was taken. Face to face interviews were conducted using the structured questionnaires, including history taking and physical examination. Apart from physical examinations, bedside obstetric ultrasound was incorporated into a few selected cases to exclude placenta previa and posterior placenta.

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RECRUITMENT AND CLINICAL WORK OUT OF PATIENTS - All patients with a clinical diagnosis of abruptio placenta over 20 weeks gestation characterized by painful vaginal bleeding accompanied by hypertonic uterine contractions, a tender tense uterus with or without nonreassuring fetal heart rate/ fetal demise, pallor and rapid breathing with hypotension (Systolic BP<90mmHg) were recruited in the study. The presence of retro-placental clots post-delivery supported the diagnosis, but their absence was not exclusion criteria for the enrollment into the study.

All cases were followed up for a period of 7 days after delivery.

III. RESULTS -

A total of 72cases of Abruptio placenta were recruited during the study period (April 2019 to April 2020) out of 8845 cases admitted for deliveries in our department of Obstetrics and Gynaecology at Government General Hospital, Siddhartha Medical College, Vijayawada.

The incidence of Abruptio Placenta among pregnant women in our hospital is 0.8 per 100 deliveries.

Among 72 cases of Abruptio placenta, 13 (19%) were booked, and 59 (81%)were unbooked at our hospital. . (Graph 1)

78% of the cases were in the age group of 21-30yrs**.** 18% of patients were ≤20yrs, and 4% were above 30 yrs Age distribution (Table 1)

Multipara[2 - 4] accounted for 62% of the cases of abruption and primipara accounted for34% of the cases and grand multiparae 3%(Table 2)

61% of the cases were between 33-36+6 wks of gestation. 8% were above 37wks of gestation and 31%were below 32 wks gestation.(graph2)

Among 72 cases in this study, hypertension complicating pregnancy is seen in 42 (65%) cases, the previous history of abruption was noted in 4% of the cases. 2(2.7%) out of 72 cases had a history of trauma. PPROM was seen in (3%) cases. hydramnios identified in 3 cases. There was an association of abruption with previous LSCS in 7(8%) cases. No specific risk factor was identified in 18 (18%) cases. .(graph3)

Out of 72 cases in this study, vaginal bleeding was the most common presentation in (69%) cases. 41(56%) cases presented with vaginal bleeding and pain abdomen while 25(34%) cases presented with vaginal bleeding alone, 6(10%) cases presented with pain abdomen.3 (4%) cases presented with decreased fetal movements and 2 (3%) cases presented with draining per vaginum (PPROM)(table 3)

In this study, (99%)women were anaemic at the time of admission. 3 8(52%)women had moderate anaemia, and 16(24%) had severe anaemia[Table4]

42(56%) cases were in PAGE 3, 12(17%) were in PAGE 2, 13(19%) in PAGE1 and 5(8%) in PAGE 0 [Table5].

Out of 72 patients in this study, 47 (49%) women delivered vaginally, and 49 (51%) underwent a Caesarean section [Table6]

67 (70%) babies were found to be low birth weight, i.e. less than 2.5 kgs and 29 (30%) babies were above 2.5 kgs [Table7]

Out of 72 patients in the study majority (30%), 21 cases of the patients had retro placental clots of size 150-500gms, 9 cases (12%) had retroplacental clots of size <150 gms, 40cases (55%) had>500gms of retroplacental clots, 2 cases are > 1500gms [Table8].

The maximum number of cases are of mixed type with 66% whereas revealed type 9% [Table9].

Out of the 16 cases of PPH, 10cases were managed by medical methods, and six were managed by surgical methods. Couvelaire uterus was noted in 14 cases intraoperatively.

Maternal mortality in this study was 1.3%

Out of the 1 cases of maternal mortality, the cause of death is DIC [Table 10]

Among the 45 live births, there were seven early neonatal deaths[respiratory distress] which occurred due to fetal distress and prematurity

Perinatal mortality in this study was 38 (53%)

27 were confirmed as IUD at the time of admission.

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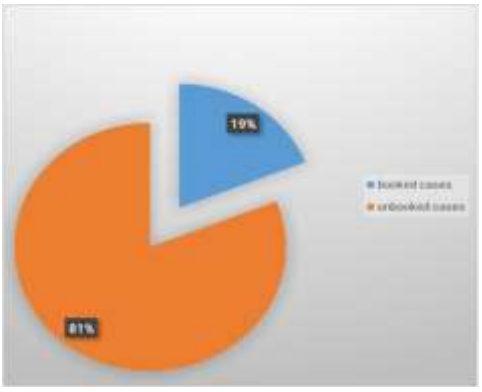
Graph 1 – Distribution of booked and unbooked cases



Among 72 cases of Abruptio placenta, 13 (19%) were booked, and 59 (81%)were unbooked at our hospital. .

Table1 - Age distribution

age	21 to 30yrs	< 21 yrs	>30 yrs
number	52 [78%]	13 [18%]	7 [4%]

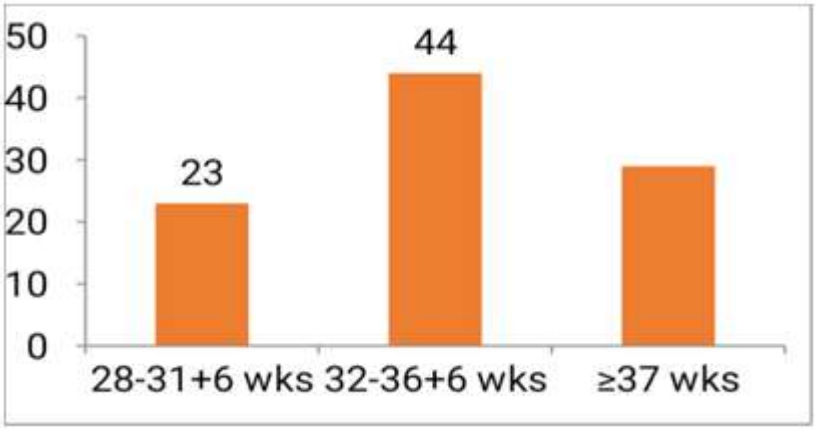
78% of the cases were in the age group of 21-30yrs**.** 18% of patients were ≤20yrs, and 4% were above 30 yrs Age distribution

Table 2 - Parity distribution

parity	Primi	Multipare [2 to 4]	Grand multiparae >4
Number[percentage]	24 [34%]	45 [62%]	3 [4%]

Multipara[2 - 4] accounted for 62% of the cases of abruption and primipara accounted for34% of the cases and grand multiparae 3%

Graph 2 - Gestational age distribution



61% of the cases were between 33-36+6 wks of gestation. 8% were above 37wks of gestation and 31%were below 32 wks gestation.

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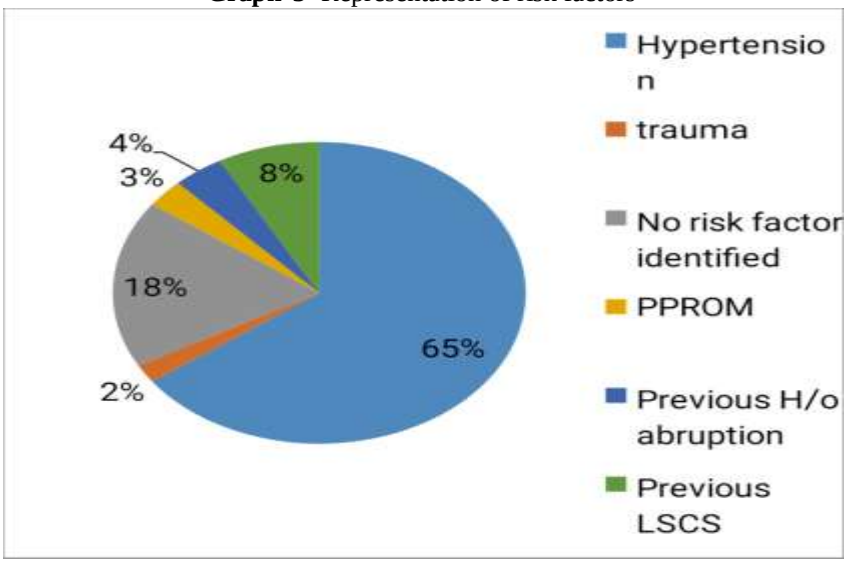
Graph 3- Representation of risk factors



Among 72 cases in this study, hypertension complicating pregnancy is seen in 42 (65%) cases, the previous history of abruption was noted in 4% of the cases. 2(2.7%) out of 72 cases had a history of trauma. PPROM was seen in (3%) cases. hydramnios identified in 3 cases. There was an association of abruption with previous LSCS in 7(8%) cases. No specific risk factor was identified in 18 (18%) cases.

Table 3 – Clinical presentation in abruption

Clinical presentation	No of cases	Percentage
Vaginal bleeding & pain abdomen	41	56%
Vaginal bleeding alone	25	34%
Pain abdomen	6	10%
Decreased fetal movements	3	4%
Draining p/v (PPROM)	2	3%

Out of 72 cases in this study, vaginal bleeding was the most common presentation in (69%) cases. 41(56%) cases presented with vaginal bleeding and pain abdomen while 25(34%) cases presented with vaginal bleeding alone, 6(10%) cases presented with pain abdomen.3 (4%) cases presented with decreased fetal movements and 2 (3%) cases presented with draining per vaginum (PPROM)

Table 4 - Hb at admission

Hb%	>11gm%	10 to 11gm%	7 to 9gm%	<7gm%
No. of patients	10 [13%]	8 [11]	38 [52%]	16 [24%]

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In this study, (99%)women were anaemic at the time of admission. 3 8(52%)women had moderate anaemia, and 16(24%) had severe anaemia

Table 5 - PAGE Classification

	Number of cases	Percentage
PAGE 0	5	8%
PAGE 1	13	19%
PAGE 2	12	17%
PAGE 3	42	56%

42(56%) cases were in PAGE 3, 12(17%) were in PAGE 2, 13(19%) in PAGE1 and 5(8%) in PAGE 0

Table - 6 - Mode of delivery

vaginal	37 [51%]
c-section	35 [49%]

Out of 72 patients in this study, 47 (49%) women delivered vaginally, and 49 (51%) underwent a Caesarean section

Table -7 - Fetal birth weight

Birth weight	<1.5 kg	1.5 to 2 kg	2 to 2.5 kg	>2.5kg
Number of cases	9 [12%]	15 [20%]	31 [43%]	19 [25%]

67 (70%) babies were found to be low birth weight, i.e. less than 2.5 kgs and 29 (30%) babies were above 2.5 kgs

T**able8** - Retroplacental clots weight

Retroplacental clots	< 150	150 - 500 gms	500 -1000gms	> 1000 gms
Number of cases	9 [12%]	21 [30%]	40 [55%]	2 [3%]

Out of 72 patients in the study majority (30%), 21 cases of the patients had retro placental clots of size 150-500gms, 9 cases (12%) had retroplacental clots of size <150 gms, 40cases (55%) had>500gms of retroplacental clots, 2 cases are > 1500gms.

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Table 9 - Type of abruption

Type of abruption	Number	percentage
mixed	47	66%
concealed	18	25%
revealed	7	9%

The maximum number of cases are of mixed type with 66% whereas revealed type 9%

Table - 10 Maternal adverse outcomes

Need for blood products transfusion	70	97%
PPH	16	22%
Hysterectomy	1	0.8%
shock	8	11%
DIC/Coagulopathy	9	12%
Acute renal failure	3	4%
Maternal death	1	1.2%

Out of the 16 cases of PPH, 10 cases were managed by medical methods, and six were managed by surgical methods. Couvelaire uterus was noted in 14 cases intraoperatively.
Maternal mortality in this study was 1.3%
Out of the 1 cases of maternal mortality, the cause of death is DIC

Table 11: Fetal adverse outcomes

	No of subjects	Percentage
Low birth weight	67	93%
LowAPGAR score(<8)	14	19%
Mortality	38	53%
IUD(preterm)	28	38%
IUD(term)	3	4%
Early neonatal death	7	9%

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Among the 45 live births, there were seven early neonatal deaths[respiratory distress] which occurred due to fetal distress and prematurity
Perinatal mortality in this study was 38 (53%)
27 were confirmed as IUD at the time of admission.

IV. DISCUSSION

This is a prospective study of 72 cases of abruptio placenta at our institute during the period of April 2019 to April2020. The incidence of Abruptio Placenta among pregnant women admitted at Government General Hospital, Siddhartha Medical College, Vijayawada from April 2019 to April2020 is 0.8 per 100 deliveries. The incidence in various studies is shown in the following table.

S.No	Author	Year	Incidence
1	Ananth et al	2006	1%
2	Shrivastava et al[64]	2012-2014	1%
3	Subha sivagami et al[13]	2017	0.5%
4	AA Akadri et al[14]	2018	1%
5.	AS Adeniran et al[15]	2017	0.7%
5	Present Study	2019-2020	0.8%

The incidence of abruption in our study is 0.8% which correlated with the above studies.

Study	Booked cases	Unbooked cases
Choudary et al. 2015[17]	33%	66%
Ismail Khan et al. 2017[18]	59%	61%
Renuka et al. 2016[19]	10%	90%
Present study	19%	81%

Among 96 cases of Abruptio placenta, 18 (19%) were booked, and 78 (81%) were unbooked at our hospital [Graph 1]. This is because most of the study group people were referred from other centres like PHCs and District hospitals. Majority of the women in this study belonged to low socioeconomic status and were from rural areas. The demographic profile in this study coincides with the studies of Choudary et al. 2015, Renuka et al. 2016. According to Ismail Khan et al. 2017, the incidence of abruption was noted to be more in unbooked cases (61%).

Among the 72 cases of abruption, 78% of the cases were in the age group of 21-30yrs, 18% of patients were ≤20yrs, and 4% were above 30 yrs [Table1] .
According to Nazli Hossain et al. 2008 study, the incidence of abruption is maximum seen in the age group of 21-30 yrs (72%).In Choudary et al. 2015 study, the incidence is 64%, and according to Subha sivagami et al. study 2017, the incidence is 74%. In the present study, the incidence in the age group of 21-30yrs is 78% which correlated with the above studies.

Multipara accounted for 66% of the cases of Abruption and primipara accounted for 34% of the cases in our study [Table2]. According to Mukherjee et al. 2014, the incidence is 81% in multipara. Sivagami et al. 2017 stated that the incidence of abruption in multiparous women is 78%. In Khan et al. study done in 2017, the incidence is 69%. which correlated with the above study. But in Choudary et al. 2015 study the incidence of abruption is more in primigravidae (58%) which did not correlate with this study.
In our study 61% of the cases were between 33-36+6 wks of gestation. 7% were above 37wks of gestation and 32%were below 32 wks gestation [Graph2].

This study is in correlation with studies of Hossain et al. 2008, Bibi et al. 2009, and Chowdary et al. 2015. But in Khan et al. study 2017 the incidence of abruption is more in women with gestational age more than 37wks (54%) compared to gestational age less than 37wks(43%) which did not correlate with this study.

The most common clinical presentation in abruption placenta is bleeding per vaginum. In the present study, 34%of the patients presented with bleeding p/v alone, 56% of the patients presented with bleeding p/v and pain abdomen and 10% presented with bleeding p/v alone [Table3].Similar results are found in studies of Hossain et al. 2008, Khan et al. 2017 and Adeniran et al. 2017.

Among 72 cases in this study, Hypertension complicating pregnancy is seen

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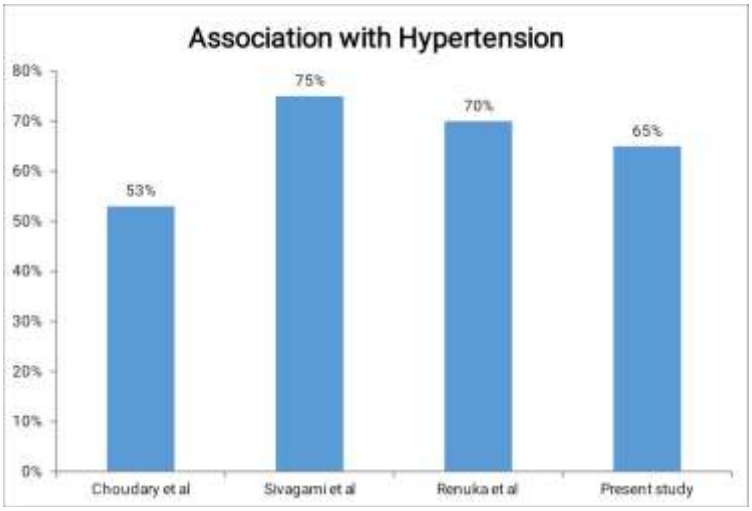
in 65%cases, the previous history of abruption was noted in 4% of the cases. 2% had history of trauma. PPROM was seen in 3% cases. There was an association of abruption with previous LSCS in 8% cases. No specific risk factor was identified in 18%cases hydramnios is identified in 3% of cases[Graph3]

Among all the risk factors, Hypertension complicating pregnancy appeared to be the commonest associated factor in 65% of mothers in the present study.



Choudary et al. 2015 stated that Hypertensive vasculopathy might affect placental vasculature thereby leading to abruption which accounted for 53%. Sivagami et al. 2017 reported an incidence of Hypertension in 75% of the cases. Renuka et al. 2017 stated that some type of hypertension was associated with 70.95% of cases. The present study is in correlation with the above-mentioned studies.

In our study, 87% of women were anaemic at the time of admission 52% women had moderate anaemia, and 24% had severe anaemian [Table4]. Most of the cases in my study belonged to lower socioeconomic status. Present study indicates that uncorrected anaemia is still common in India contributing to increased maternal mortality and morbidity and also necessitating high requirement of blood transfusion Sarwar et al. 2004 reported an incidence of 96% anaemia. This high frequency of maternal anaemia is reflective not only of the bleeding of abruptio placenta but is aggravated by an underlying chronic maternal nutritional deficit common in our country. In Kapadia et al. 2017[20] study, most of the patients (89%) were anaemic (<10.9 gm%) at the time of admission. These findings suggest that abruptio placentae cause anaemia and subsequent shock due to blood loss.

Out of 72 patients in this study, 51% women delivered vaginally, and 49% by Caesarean section [Table6]. Our caesarean section rate has been high in an effort to salvage the fetus. Also, caesarean section was high because majority of cases in our study were at 32 - 36 weeks of gestation, primigravida with unfavourable cervix with preeclampsia. In the present study rate of caesarean delivery is 51% which is comparable to other studies by AA Akadri et al. and Adeniran et al and the study by Hossain et al. vaginal deliveries were higher about 55%.In Mukherjee et al. study, the vaginal delivery rate was as high as 70 %.

Maternal morbidity due to caesarean section has very well decreased nowadays due to the advent of higher antibiotics, haematological facilities and with improved anaesthetic neonatal services. So this increased number of caesarean sections has definitely brought down our maternal and perinatal mortality.

In our present study, 56% cases were in PAGE 3. 17% were in PAGE 2, 19% in PAGE1 and 8% in PAGE 0 [Table5].

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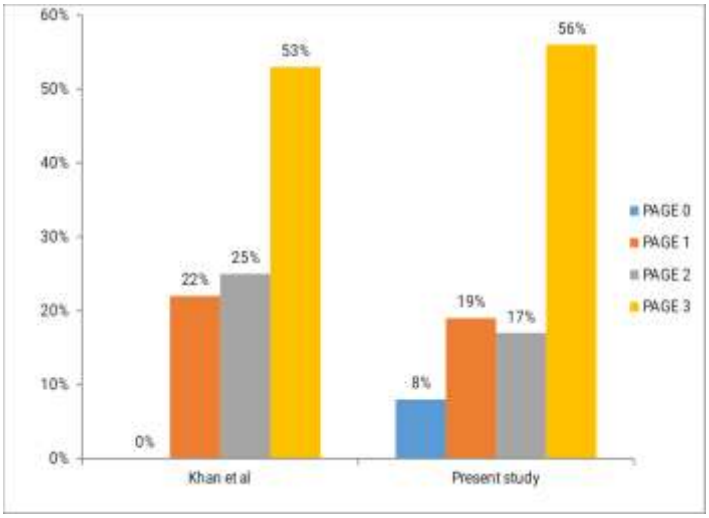
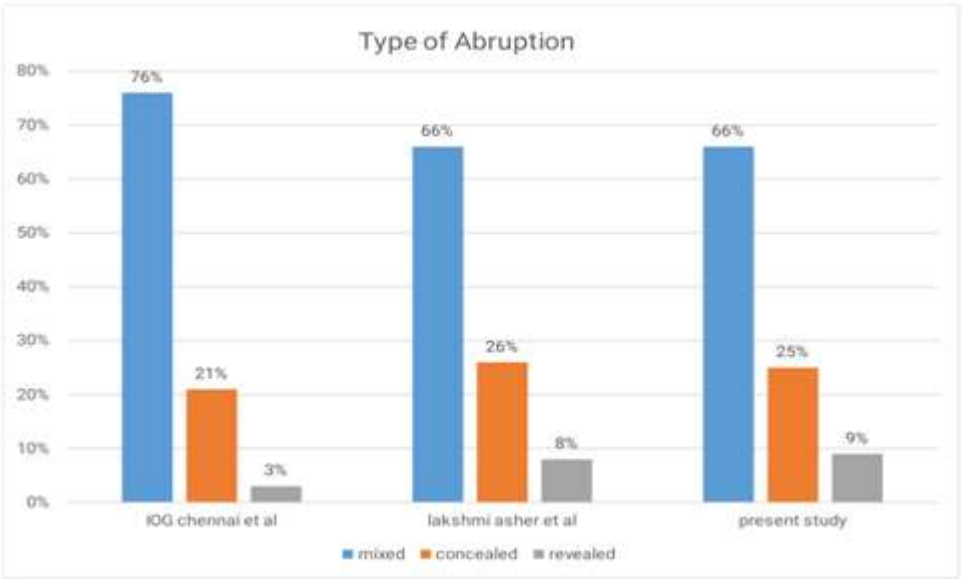


As shown above, 56% of the cases in this study were on PAGE 3, which correlated with the study of Khan et al. 2017(53% on PAGE 3).

In present study, showed a higher percentage of mixed (66%) type of abruption [Table9]



As shown above, the present study showed a higher percentage of mixed (66%) type of abruption, which is comparable with other studies by Lakshmi Asher et al. and Sheba Mathavi et al. IOG Chennai 2014.

The incidence of low birth weight babies is 70% in the present study, which correlates with the studies of Sarwar et al. 2004, Nath et al. 2007, and Adeniran et al. 2018. This high rate of low birth weight babies is due to the preterm deliveries.

Perinatal mortality in this study was 53%. 38%were confirmed as IUD at the time of admission. The seven fetuses were born alive but died in the early neonatal period due to respiratory distress [Table11]. In Kapadia et al. study 2017, the perinatal mortality rate was 72%. But in Sivagami et al. study 2017, the live birth rate was 69.8%.

Leading cause for the neonatal deaths is prematurity, next to being birth asphyxia. Hossain et al. 2008 study stated that increased perinatal mortality was seen with preterm gestation.

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Adverse outcomes	Kapadia et al. 2017	Khan et al2017	Sivagami etal.2017	Choudary et al. 2015	Present study
PPH	11%	23%	20%	23%	22%
DIC	16%	12%	17%	20%	9%
ARF	6%	7%	11%	11%	3%
Hysterectomy	----	----	----	2%	1%
Blood products transfusion	72%	63%	----	----	76%
Maternal death	4%	11%	----	0	2%

In Kapadia et al. study 2017 study, pregnant women with abruptio placentae were at higher risk for developing complications like PPH (11%), DIC (16%), AKI (6%), Shock (9%) wound gaping (2%) and mortality in 4%. 72% of the cases of abruptio placentae required blood transfusion and 40% FFP transfusion, 8% of cases required cryoprecipitate transfusion, 28% of cases required PRC transfusion.

In Khan et al. study 2017 anaemia appeared as the most common complication (57.66%) followed by hypovolaemic shock (25.18%) and PPH (23.72%). DIC and ARF occurred in 35(12.77%) and 18(6.57%) patients, respectively. Postpartum depression was seen in 79 patients (28.83%). Blood transfusion-related complications were seen in 10 patients (5.78%) out of the 173 patients (63.14%) who required transfusion. Maternal mortality was 11.67%

According to Choudary et al. 2015 study, among maternal complications, PPH was commonest, followed by disseminated intravascular coagulation, puerperal sepsis, shock and renal failure. There was no maternal mortality in this study. .This was attributed to improved obstetric care, timely interventions and availability of blood and blood components.

In Sivagami et al. 2017 study among the maternal complications, Postpartum Hemorrhage was commonest followed by Disseminated Intravascular coagulation (DIC), Acute Renal Failure (ARF), shock, pulmonary oedema and infection.In the present study out of the 22 cases of PPH, 15 were managed by medical methods, and six were managed by surgical methods. Couvelaire uterus was noted in 24 cases intraoperatively. Maternal adverse outcomes in this study are out of 96 cases blood, and blood products transfusion required in 76% of cases, maternal shock in 8% cases, DIC found in 9% cases, ARF in 3% cases and hysterectomy in 1% cases. Maternal mortality in this study was 2 %. Out of the 2 cases of maternal mortality, the cause of death in 1 case was due to DIC. The cause of death in the one case was due to severe hypovolemic shock and acute renal failure. Similar results were seen in our study.

Fetal outcome	Sarwar et al. 2004	Kapadia Et al. 2017	Khan Et al. 2017	Choudary Et al. 2015	Present study
IUDs	59%	69%	30%	52%	38%
LBW	62%	76%	48%	---	70%
Low APGAR	10%	---	27%	42%	19%
Early neonatal deaths	9%	3%	6%	6%	9%
Perinatal mortality	68%	72%	61%	58%	53%

In the present study, perinatal mortality is 53% out of which 38% were confirmed as IUDs at the time of admission to our hospital. This high rate of IUDs is due to more number of referred cases to our hospital from the surrounding rural areas and late presentation of the patients to the hospital. 9% of early neonatal deaths occurred,most of them due to prematurity and respiratory distress.

In Kapadia et al. study 2017, perinatal mortality was 72%. Such a high rate was due to IUD which had more occurred in cases of abruptio placentae leads to poor prognosis as there is a late presentation of the patient to the hospital, during which time the disease progress to an advanced stage.

According to Khan et al. 2017 study, 27.7% showed intrapartum foetal distress at presentation. Only 50% weighed above 2.5kg, and among the rest, 47.45% were low birth weight, and 2.55% were macrosomic at the time of delivery. One hundred fifty- one stillbirths (55.1%) were recorded with the majority (30.29%) occurring as intrauterine foetal deaths and 24.81% occurring as intrapartum deaths. Only 123 live births were recorded (44.89%) with 45 of these babies (36.58%) requiring NICU admission. Sixteen babies died in the first week of life (5.84%). Total perinatal mortality was 60.94%.

V. CONCLUSION

Abruptio placenta is grave and potentially life-threatening condition for mother and foetus which tests the limits of even the best. Hypertensive disorders in pregnancy were the most common risk factor associated with abruption in 65% of the cases. Vaginal bleeding was the most common clinical presentation in 69% of the cases. Good antenatal care , early identification of risk factors, timely anticipation and referral of cases to higher center, availability of blood products and efficient obstetric and perinatal care with multispeciality approach can reduce maternal, perinatal mortality and mobidity.

REFERENCES

[1]. Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, Spong CY. Williams Obstetrics.25th ed. USA: Mc Graw Hill Publishers; 2018.767-773.

[2]. Oyelese, Yinka, and Cande V. Ananth. “Placental abruption.” Obstetrics and Gynecology 108.4 (2006): 10051016.

[3]. Tikkanen M: placental abruption: epidemiology, risk factors and consequences. acta obstetricia et gynecologica scandinavica 2011, 90:140-149.

[4]. Baumann, P., Blackwell, S.C., Schild, C., Berry, S.M. and Friedrich, H.J. (2000) Mathematic modelling to predict abruptio placentae.Am. J. Obstet. Gynecol.,183, 815-822.

[5]. Sengodan SS, Dhanapal M. Abruptio placenta: a retrospective study on maternal and perinatal outcome. Int J Reprod Contracept Obstet Gynecol 2017;6:4389-92.

[6]. Rosen, T., Schatz, F., Kuczynski, E., Lam, H., Koo, A.B. and Lockwood, C.J. (2002) Thrombinenhanced matrix metalloproteinase-1 expression: a mechanism linking placental abruption with premature rupture of the membranes. J. Matern. Fetal Neonatal Med.,11, 11-17

[7]. Ananth.C.V.1996b Placental abruption and adverse outcomes JAMA 282 1646-1651

[8]. Ananth, C.V., Smulian, J.C. and Vintzileos, A.M. (1999a) Incidence of placental abruption in relation to cigarette smoking and hypertensive disorders in pregnancy: a meta-analysis of observational studies. Obstet. Gynecol.,93,622- 628.

[9]. M M du Toit, M Smith, H J Odendaal, (2010). The role of prenatal alcohol exposure in abruptio placentae. South African Medical Journal 2010;100(12):832-835.

[10]. D. Flowers, J. F. Clark, L. S. Westney. Cocaine intoxication associated with abruptio placentae Natl Med Assoc. 1991 Mar; 83(3):230–232.

[11]. Mercer, B.M. (2003) Preterm premature rupture of the membranes. Obstet.Gynecol., 101, 178193.centa Am. J. Forensic Med. Pathol., 24, 193-197

[12]. Ananth, C. V., Peltier, M. R., Moore, D. F., Kinzler, W. L., Leclerc, D., & Rozen, R.R. (2008). Reduced folate carrier 80A→G polymorphism, plasma folate, and risk of placental abruption. Human Genetics, 124(2), 137–145.

[13]. Shrivastava V, Kotur P, Jauhari A. Maternal and fetal outcome among abruptio placentae cases at a rural

tertiary hospital in Karnataka, India: a retrospective analysis. Int **J** Res Med Sci2014;2:1655-8.

[14]. Akadri AA, Ogunsowo KM, Odelola OI. Abruptio Placenta: A retrospective analysis in a tertiary hospital, Sagamu, Nigeria.Trop **J** Obstet Gynaecol 2018;35:142-6

[15]. Adeniran AS, Elegbua CO, Ezeoke GG, Adesina KT, Balogun OR. Abruptio placentae: Epidemiology and pregnancy outcome in a low‐resource setting. Port Harcourt Med **J** 2018;12:131-5.

[16]. Sengodan SS, Dhanapal M. Abruptio placenta: a retrospective study on maternal and perinatal outcome. Int **J** Reprod Contracept Obstet Gynecol 2017;6:4389-92.

[17]. Dr.Vrunda Choudhary, Dr.Sonali Rathi Somani, Dr.Shashikanth Somani Evaluation of Risk factors and Obstetric and Perinatal Outcome in Abruptio Placenta IOSR **J**ournal of Dental and Medical Sciences (IOSR-**J**DMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 14, Issue 5, Ver.VII (May 2015), PP 36-39

[18]. Mohammed Ismail Khan*, KS Saraswathi, R Shyamala, Ibrahim Azam, MK Salman, Syeda Sakina Amtul Ali-Placental Abruption: An Obstetricians Nightmare – A Study of Risk Factors and Maternofoetal Outcomes at Two Tertiary Care Teaching Hospitals in South India Asian Pac. **J**. Health Sci., 2017; 4(1):220-230 e-ISSN: 2349-0659, p-ISSN: 2350-0964

[19]. P. Renuka, K. Aruna Kumari, Akhila. Maternal and perinatal outcome in abruptio placenta – Study at a teaching hospital. IAIM, 2016; 3(10): 111-116.

[20]. Study of Maternal and Perinatal Outcome in 100 Cases of Abruptio Placentae Lalit D Kapadia and Bindeeya Dhrangiya* International **J**ournal of Medical Research & Health Sciences, 2017, 6(7): 84-88 ISSN No: 2319-5886.