IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 6 Ser.9 (June. 2021), PP 15-19
www.iosrjournals.org

A prospective study of clinical profile of abruptio placentae.

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Abstract:
Background*: Placental abruption is defined as the complete or partial separation of the placenta before delivery is one of the leading causes of vaginal bleeding in the second half of pregnancy. Approximately 10% of all preterm births and up to one third of all perinatal deaths are caused by placental abruption. The present study was planned to review the problem of abruption placentae as it presents clinically and to study the clinicopathological correlation as it relates to the maternal and perinatal outcome.*
Materials & Methods*: Study was conducted on all abruptio patients satisfying inclusion and exclusion criteria. The case diagnostic criteria were: 1. Gestational age equal to or more than 28 weeks 2. Abdominal pain 3. Presence of uterine irritability and tenderness 4. presence of retroplacental clots and areas of infarction on the placenta. Pre-validated, pretested, semi structured questionnaire was used as data collection tool. Per vaginal examination of the patient was done after blood was ready.*
Results*: Incidence rate of abruption was 1.25%. Most of the cases were from the age group of 26-30 years age group. Most common presenting symptom was vaginal bleeding in 45 (75%) patients followed by pain in abdomen (58.33%). pre-eclampsia was commonest risk factor present in 31 (51.67%) cases. Chronic hypertension, trauma and past history of abruption were the other risk factors.*
Conclusion*: Advancing maternal age and parity, LSCS and pre-eclampsia were the important risk factors we have found in our study. Anaemia, shock and PPH were the adverse maternal outcome associated with the abruptio placentae.*
Keywords*: Abruptio placentae, Maternal and perinatal outcome, clinical profile.*

Date of Submission: 05-06-2021 Date of Acceptance: 18-06-2021

I. Introduction

Antepartum haemorrhage is a great obstetric emergency and is a leading cause of maternal and perinatal mortality and morbidity. APH is defined as haemorrhage from genital tract after 20 weeks of gestation but before the delivery of the baby. APH can be due to placenta praevia, Abruptio placentae, indeterminate cause or local causes of genital tract.

Placental abruption is defined as the complete or partial separation of the placenta before delivery, is one of the leading causes of vaginal bleeding in the second half of pregnancy.[1,2] Approximately 0.51% of the pregnancies are complicated by placental abruption.[1,2] Bleeding and pain are classical symptoms of abruption but the clinical picture of this emergency varies.[1,2] Placental abruption is one of the most important causes of maternal morbidity and perinatal mortality. Approximately 10% of all preterm births and up to one third of all perinatal deaths are caused by placental abruption[1,2]

It has been identified that uterine atony, uterine anomalies, abdominal trauma, pre-eclampsia, chronic hypertension, prematurity, low birth weight and preterm birth were the risk factors for antepartum haemorrhage.[3] Other risk factors for abruption include advanced maternal age, grand-multiparity, maternal cigarette smoking and iron deficiency anemia during pregnancy.[4,5,6] In many countries the rate of placental abruption has been increasing (Saftlas et al. 1991) perhaps and due to advancing maternal age and increasing cesarean section rates. [2,7,8,9]

Furthermore Lower gestational age at delivery is the most important risk factor for poor neonatal outcome with placental abruption and poor maternal outcome correlated with HELLP syndrome, and previous cesarean section. Impact of abruption on offspring mortality exceeds far beyond perinatal mortality which can be mostly due to birth asphyxia and prematurity related consequences.[10]

Our hospital is a major referral centre and gets a lot of referral not only from rural and urban areas of our district, but also from neighbouring state. The present study was planned to review the problem of abruption placentae as it presents clinically and to study the clinicopathological correlation as it relates to the maternal and perinatal outcome.

Objective:

1. To evaluate the disease frequency of abruptio placentae.
2. To analyse the risk factors responsible for causing abruptio placentae.
3. To determine the maternal and fetal outcome in patients with abruptio placentae.

II. Materials And Methods

The protocol of this longitudinal observational study was approved by the Institutional Ethical committee of the medical college. Written informed consent was taken from all study subjects before collection of data.

This study was conducted during the period of two years from Dec. 2010 to Sept. 2012. It was decided to include all the cases of abruptio placentae presenting to the hospital during the study period. Study was conducted on all patients satisfying inclusion and exclusion criteria, at inpatient Department of Obstetrics and Gynecology of Government medical college and hospital. The diagnostic criteria were: 1. Gestational age equal to or more than 28 weeks 2. Abdominal pain usually present 3. Presence of uterine irritability and tenderness in most of the cases. 4. Evidence of foetal distress or foetal demise may be present 5. Cases showing presence of retroplacental clots and areas of infarction on the placenta. Revealed or concealed haemorrhage. Age, gravidity, parity, and gestational age at diagnosis/delivery were collected for all patients. Gestational age was calculated using the last menstrual period and confirmed by an obstetric ultrasound in the first trimester.[11] Risk factors associated with placental abruption such as mechanical trauma, preterm premature rupture of membranes (PPROM), premature rupture of membranes (PROM), chronic hypertension, preeclampsia, eclampsia, hemolysis, elevated liver enzymes, low platelet (HELLP) syndrome, placenta previa, mode of delivery, history of previous cesarean section, intrauterine growth retardation (IUGR), gestational diabetes mellitus (GDM), pre-GDM, smoking and alcohol usage were recorded. Pre-validated, pretested, semi structured questionnaire was used as data collection tool. Per vaginal examination of the patient was done after Blood was ready. An intravenous infusion was started in those cases in which placenta praevia was ruled out by clinical sonographic examination and clinical features were strongly in favour of abruptio placentae. Artificial ruptures of membranes were done in patients in whom membranes were present, if not contraindicated. Oxytocin was added to augment weak labour pains & effect artificial rupture of membranes.

III. Results

Present study was longitudinal follow up study, conducted on 60 abruptio placentae cases. Response rate was 100%. Total 4800 deliveries were conducted at our tertiary care hospital during the study period of which 60 were cases of abruption, giving the incidence rate of 1:80 or 1.25%.

Table 1. Distribution of study subjects according to some baseline categories.

Baseline Category	Subcategory	Frequency	Percentage
Age group	21-25	15	25.00
	26-30	24	40.00
	31-35	18	30.00
	36-40	03	05.00
Parity	Primigravida	16	26.67
	2nd gravida	10	16.67
	3rd gravida	14	23.33
	4th gravida and above	20	33.33
Gestational weeks	28-31	17	28.33
	32-36	36	60.00
	37-40	07	11.66
	>40	00	00
Type of hemorrhage	Revealed	03	05.00
	Concealed	16	26.67
	Mix	41	68.33
Nature of delivery	Spontaneous vaginal	03	05.00
	ARM + Pitocin	32	53.33
	Instrumental	04	06.67
	LSCS	21	35.00

Most of the cases i.e. 24 (40%) were from the age group of 26-30 years age group followed by 18 (30%) were from the age group of 31-35 years age group. (Table 1)

In the present study, majority i.e. 20 (33.33%) abruption cases were of the gravida 4th and above. In majority i.e. 36 (%) abruption cases occurred at the gestational age of 32-36 weeks. In 3 (5%) abruption cases type of haemorrhage was revealed and it was concealed in 16 (26.67%) while in majority i.e. 41 (68.33%) haemorrhage was mixed type. In most i.e. 32 (53.33%) abruption cases the nature of delivery was artificial rupture of membrane augmented by Pitocin followed by 21 (35%) cases had LSCS as the mode of delivery. (Table1)

Table 2: Distribution of study subjects according to presenting symptoms.

Presenting symptoms	Frequency	Percentage
Vaginal bleeding	45	75.00
Pain in abdomen	35	58.33
Loss of fetal movements	12	20.00
Labour pains	18	30.00

Table 2 shows amongst abruption cases, most common presenting symptom was vaginal bleeding in 45 (75%) patients followed by pain in abdomen (58.33%), labour pains (30%) and loss of fetal movements (20%).

Figure 1. Distribution of study subjects according to clinical signs

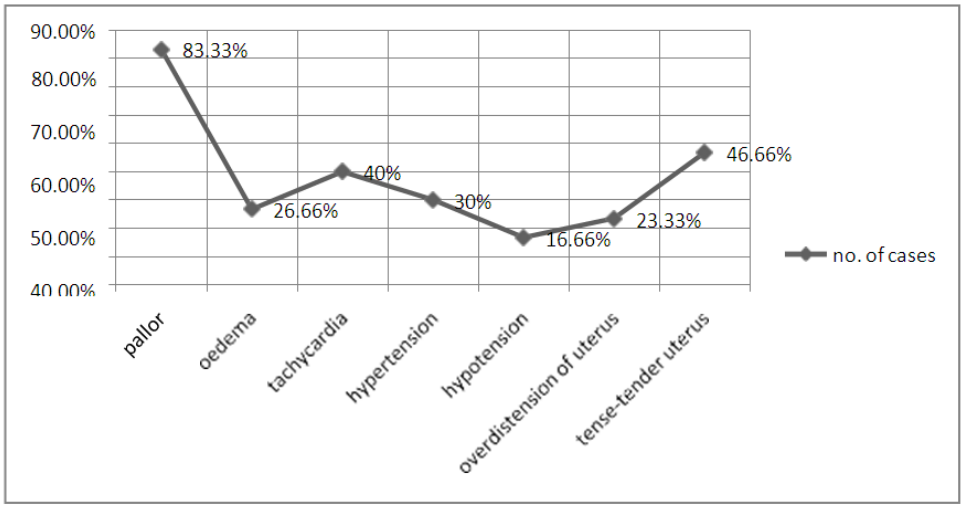

Figure 1 depicts that commonest clinical sign was pallor (83.33%) followed by tenderness of uterus (46.66%), tachycardia (40%) and hypertension (30%). Other clinical signs were distension of uterus, hypotension and oedema.

Table 3: High risk factors in abruptio placentae.

Risk factor	Frequency	Percentage
Pre-eclampsia	31	51.67
Chronic hypertension	03	05.00
Trauma	02	03.33
Past history of abruption	02	03.33

We have found that pre-eclampsia was commonest risk factor present in 31 (51.67%) cases. Chronic hypertension, trauma and past history of abruption were the other least prevalent risk factors.

Table 4: Distribution of study subjects according to maternal outcome.

Maternal outcome	Frequency	Percentage
Shock	10	16.66
DIC	00	00
ARF	00	00
PPH	09	15.00
Severe anaemia	13	21.66

Study of maternal outcome has shown that severe anaemia was the commonest outcome in 13 (21.66%) patients followed by shock in 10 (16.66%) and post-partum haemorrhage in 9 (15%) patients.

Table 5: Distribution of study subjects according to fetal outcome.

Fetal outcome	Frequency	Percentage
Still birth	34	56.67
Neonatal death	05	08.33
Living	21	35.00
Total	60	100

Study of fetal outcome revealed, in 34 (56.67%) of the cases it was still birth and in 5 (8.33%) neonatal death while in 21 (35%) patients outcome was favourable i.e. live foetus was borne.

IV. Discussion

In this study the incidence of abruption placentae was found to be 1.25% i.e. 1:80. Similar finding was reported by Niswander[12] (incidence 1:83), Lunan[13] (incidence 1:78) and Hurd[14] (incidence 1:77) but in contrast low incidence was noted by Purandare[15] (incidence 1:158) and Golditch[16] (incidence 1:206). Higher incidence in our study probably because of poverty, lack of adequate antenatal check-up, malnutrition & ignorance which is present in the majority of the Indian population.

Maximum cases in this study were in 26-30 years age group. Incidence of abruption placentae increases with increasing maternalage. This is explained by the fact that chronic hypertensive disorders aremore likely in the older age group & parity too increases with age. This is in line with Parikh[17] and Dyer – McCaughey.[18] In the present study, majority abruption cases were in multipara. Donald[23] states that the incidence in multipara is four times as high as in primigravida and puts the blame on rapid & repeated child bearing. The later causes an unhealthy condition of the deciduas resulting in a pathological condition of the implantation site. In this study 32 – 36 weeks group was found to be the common periodof occurrence which is compatible with the finding of other workers (Purandare[15]and Donald et al[19]). In maximum cases mixed type of haemorhage was noted and consistent finding was also noted by Purandare[15]. In majority of the abruption cases the nature of delivery was artificial rupture of membrane augmented by Pitocin and LSCS.

In this study, amongst abruption cases, most common presenting symptom was vaginal bleeding followed by pain in abdomen, labour pains and loss of fetal movements. Commonest clinical sign was pallor followed by tenderness of uterus, tachycardia and hypertension. It is one of the main feature which differentiates abruption placentae from placenta praevia. 21 % patients went in anaemia, 16.66% of the patients were in shock and 9% PPH. All were managed by transfusing blood, haemaccel, Ringer lactate & 5% dextrose. Golditch[16] and Haynes[20] reported quite lower rates of PPH.

We have found that pre-eclampsia was commonest risk factor in abruption cases. Chronic hypertension, trauma and past history of abruption were the other least prevalent risk factors. Similar finding was reported by Paintin[21], Pritchard[22], Vintzileos [23] & Gonen[15] have stated PPROM (preterm premature rupture of membrane) as a aetiological factor for abruption placentae. In our study there was no case of PPROM. Adverse fetal outcome i.e. still birth in 56.67% and neonatal death in 8.33% noted while in 35% patients outcome was favorable i.e. living fetus. Consistent finding noted by Donald[19] (incidence of perinatal mortality was 58%) and Blair[24] (incidence of perinatal mortality was 55%).

V. Conclusion

In the present study incidence of abruptio placentae was 1.25%. Vaginal bleeding was commonest complaint and pallor & tenderness of the uterus were the common clinical signs among the cases. Advancing maternal age and parity, induction delivery, LSCS and pre-eclampsia were the important risk factors we have found in our study. Anaemia, shock and PPH were the maternal outcome & still birth and neonatal death were the adverse fetal outcome associated with the abruptio placentae.

Declaration: There was no source of funding in our study hence there were no any conflict of interest.

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Dr. Jaideep Solanke, et. al. "A prospective study of clinical profile of abruptio placentae."*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(06), 2021, pp. 15-19.