

Risk Factors and Perinatal Outcome in Placental Abruption

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Background: This is bleeding following premature separation of a normally situated placenta. It is a life threatening complication of pregnancy associated with considerable maternal and Perinatal morbidity and mortality. The aim of the study was to determine the risk factors and Perinatal outcome of placental abruption in a tertiary care teaching hospital.

Methods: This study was conducted at the Department of Obstetrics and Gynecology Jinnah Hospital, Lahore from May 2000, to May 2001. All cases of placental abruption delivered during the study period were reviewed for risk factors and outcome. The study population was compared with a control group of pregnancies who delivered without any complication.

Results: During the study period 84 cases of placental abruption were diagnosed. Risk factors identified for placental abruption were increasing age and parity, pregnancy induced hypertension, preeclampsia, intra uterine growth restriction and multiple pregnancy. As compared to control group the rate of abdominal delivery was higher in study group. There were 25% intrauterine fetal deaths in the study group as compared to 4.76% in the control group.

Conclusion: Multiple risk factors are known to cause placental abruption. It is associated with increased mortality and morbidity for mother but the Perinatal outcome is affected mostly. Bad Perinatal outcome is associated with prematurity, low birth weight, intrauterine death and early neonatal death.

Key words: Placental abruption, perinatal outcome, risk factors.

Introduction

Antepartem haemorrhage complicates 2-5% of all pregnancies.^{1,2} Placental abruption is a major cause of third trimester bleeding. The incidence of abruption varies from 0.49 to 1.8%.³ The etiology of placental abruption is unknown in the majority of cases. Several risk factors are associated with placental abruption. Reported mortality rates are between 20-40%.⁴ The causes for high perinatal mortality are prematurity and low birth weight. About 50% of the perinatal deaths are still borns. Maternal risk factors are older age, increasing parity, cigarette smoking, preterm rupture of membranes, multiple pregnancy and pregnancy induced hypertension. There is no consensus on whether hypertension precedes the abruption or vice versa. In our study risk factors were reviewed in 84 cases of abruption and compared with equal number of uncomplicated pregnancies. The mode of delivery and perinatal outcome was also compared.

Materials and Methods

This study included 84 cases of placental abruption who delivered in labour room of Jinnah Hospital during the study period. Our definition of abruption required two or more of the following criteria:¹ Antepartum haemorrhage after 28 weeks of gestation,² uterine pain or tenderness,³ fetal distress / IUD and⁴ blood clot behind the placenta. In all cases

of abruption, there was either ultrasonic and or microscopic evidence of retro placental clot. Patients were evaluated Information about maternal age, parity, gestational age, presence of PIH/ preeclampsia, any other medical problem, mode of delivery and perinatal outcome were collected. This information was compared with the control group of patients with uncomplicated pregnancies.

Results

During the study period 84 cases of abruptions were diagnosed in the hospital setting. Table I shows the comparison of study and control groups. The incidence of abruption varied significantly according to maternal age with the highest rates among those aged 20-34 years followed by those > 34 years old but this was observed also in the control group. There was strong association with parity, highest among parous women, parity > 5 when compared with the control group. Women with preeclampsia and pregnancy induced hypertension and intrauterine growth retardation (IUGR) were at increased risk when compared with the control group. Upto 60% of babies born to patients with abruption placenta were males so male fetal gender may be associated with a significant increase in risk. The incidence of cesarean section was 52.38% compared with 20.23% for the control group. The intrauterine deaths in patients with abruption was 25% compared with 4.76% for the control group.

Table 1: Comparison of risk factors between abruption and the control group. n = 84

Risk Factors	Placental Abruption n (%)	Control n (%)
Parity: Para 1-2	21 (25)	30 (35.71)
Para 3-4	22 (26.19)	35 (41.66)
> 5	41 (48.80)	19 (22.61)
Age (years) < 20	02 (2.38)	14 (16.66)
20-30	49 (58.33)	45 (53.57)
> 30	33 (39.28)	30 (35.71)
Gestational age (weeks) < 37	51 (60.71)	24 (28.57)
> 37	33 (39.28)	60 (71.42)
PIH	19 (22.61)	05 (5.95)
IUGR	12 (14.28)	02 (2.38)
Multiple Pregnancy	07 (8.33)	04 (4.76)
Mode of delivery abdominal	44 (52.38)	17 (20.23)
Vaginal	40 (47.61)	67 (79.76)
Birth weight in gms <2500	41 (48.80)	19 (22)
> 2500	43 (51.19)	65 (77.38)
Fetal gender: Male	50 (59.52)	43 (48.80)
Female	34 (40.47)	41 (51.19)

Table 2: Perinatal outcome.

	Placental abruption n (%)	Control n (%)
Intrauterine fetal death	21 (25)	4 (4.76)
Early neonatal Death	2 (4.76)	2 (2.38)

Discussion

There are independent associations of Placental abruption with severe fetal growth restriction, prolonged rupture of membranes, chorioamnionitis, PIH / preeclampsia, smoking, advanced maternal age, and unmarried status.⁵

In our study Placental abruption was significantly associated with PIH. Abdella et al⁶ found the highest incidence of abruption to be associated with eclampsia. Erikson et al⁷ also agree but Paterson et al⁸ found no co-relation. Placental abruption is also associated with IUGR. There is some evidence that poor placentation can cause abruption and this m

ay be a recurring problem. The finding of high mid pregnancy levels of maternal serum alpha-fetoprotein in the absence of fetal abnormality indicate an increased risk of IUGR, preterm labour and placental abruption.⁹ Prior pathology of uteroplacental circulation as a cause of abruption was found in two studies which detected abnormal Doppler waveforms in uterine arteries before Abruption, but the predictive value of this test is low.^{10,11}

All complication are more common in twin gestation, this includes placental abruption. The cause is unclear. There is a well recognized link between preterm labour, preterm rupture of membranes and chorioamnionitis with Placental abruption.¹²

Our data showed an increase risk of abruption with parity, but not with increasing maternal age. Most cases of abruption (58.33%) occurred in the age group 20-30 years age, while abruption occurred only in (39.28%) above the age of 34 years, this is in agreement with Hibbard and Jeffcoate¹ but in disagreement with Krohn et al.¹² Although male fetal gender has not been a major focus of previous etiologic studies of abruption our findings show an association which is consistent with the results of

common among women with abruption because it is the preferred method of delivery in the presence of hemorrhage and fetal distress. The significance of identification of risk factors is that preventable factors such as pregnancy induced hypertension, preeclampsia and IUGR can be identified and treated early in antenatal period so that abruption can be prevented and associated mortality and morbidity can be reduced. In our study the percentage of intra uterine death and early neonatal death are significantly higher in the study group as compared to control.

Conclusion

High parity, preeclampsia and hypertension are significant etiological determinants of abruption

Placentae. The perinatal mortality from abruption varies from 20% to 55%. It can be lowered by identification of risk factors, intensive fetomaternal monitoring of high-risk patient, early detection / diagnosis of abruption and readiness to deliver by lower segment caesarean section.

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