

To Determine the Frequency of Preterm Births in Abruptio Placentae in a Tertiary Care Hospital, in Urban City of Pakistan

TAHREEM BABAR¹, AFSHAN SHAHID², SHAMAILA SHAMAUN³, RIFFAT JALEEL⁴, NAZIA HAKEEM⁵, SUMAIRA IQBAL⁶

¹Women Medical Officer, Sindh Govt Qatar Hospital, Orangi Town Karachi

^{2,3,5}Assistant Professor, Obstetrics & Gynecology, DIMC/DUHS, Karachi

⁴Professor Obstetrics & Gynecology, DIMC/DUHS, Karachi

⁶Senior Registrar, Obstetrics & Gynecology, Lady Duffrin Hospital, Karachi

Corresponding author: Tahreem Babar, Email: dr.tahreembabar@gmail.com, Cell: +923313668174

ABSTRACT

Introduction: Abruption placenta is a serious condition in which a normally sited placenta detaches its attachment from the uterine wall, after 20 weeks of gestation and before the delivery. Abruptio placentae is associated with various complications. In this study, we will focus on frequency of preterm birth in patients with abruptio placentae.

Material and Methods: This cross-sectional study was conducted at the department of Obstetrics and Gynecology Unit – I, Civil Hospital Karachi and Dow University of Health Sciences from January 2021 to December 2021. Three hundred and eighty four (384) patients with confirmed diagnosis of abruptio placentae were followed till delivery of their babies.

Results: 154 (40.1%) participants had preterm delivery. Preterm delivery was significantly higher in participants with parity more than 3 (p value < 0.0001). There was no difference in frequency of preterm based on age and status

Conclusion: Preterm deliveries are very prevalent in pregnant women presenting with abruptio placentae. Booked participants who are at risk of abruptio placentae should be monitored more closely and they should be made aware of the possible complication of preterm delivery associated with abruptio placentae.

Keywords: Abruptio placentae, preterm delivery, premature delivery, tertiary care, Pakistan

INTRODUCTION

Abruptio placentae is a serious condition in which a normally sited placenta detaches its attachment from the uterine wall, after 20 weeks of gestation and before the delivery. This condition is risky for both mother and the fetus, but more so for the fetus. It occurs in 3.5%–4.75% of all pregnancies in Pakistan [1, 2]. The disorder is characterized by placental dysfunction which can result in a decrease in oxygenation and the nutrient exchange for the fetus. Abruptio is a known risk factor for growth restriction, prematurity, preterm deliveries and perinatal mortality; depending on factors such as the gestational age, fetal weight and degree of premature placental separation[3-6].

Preterm birth remains one of the most serious problems faced by an obstetrician and other perinatal healthcare professionals. Preterm births are defined as delivering before 37 weeks of gestation. Women diagnosed with abruptions are at 4 to 5 times increased risk of having preterm deliveries [7]. It is believed that release of thrombin because of decidual-placental hemorrhage and hemosiderin deposition [8, 9]; both commonly found in the setting of abruption—triggers labor leading to preterm delivery [10, 11].

The purpose of this study was to determine the frequency of the preterm births and its causal relationship with abruptio placentae.

MATERIAL AND METHODS

This cross-sectional study was conducted at the department of Obstetrics and Gynecology Unit – I, Civil Hospital Karachi and Dow University of Health Sciences from January 2021 to December 2021. Three hundred and eighty four (384) patients with confirmed diagnosis of abruptio placentae, whose gestational age was beyond 24-

weeks were included in this study via consecutive convenient non-probability sampling. Patients with twin pregnancy, smoking history and placenta praevia were excluded. Diagnosis of abruptio placentae was made based on clinical features. Symptoms for a diagnosis of placental abruption included heavy vaginal bleeding accompanied by uterine tenderness, fetal distress, or evidence of retro placental clots on the placenta.

The detailed History, general physical examination, abdominal and pelvic examinations performed, along with the relevant investigations and imagings. Patients were managed according to the maternal and fetal conditions. Preterm birth has been defined as any birth before 37 weeks completed weeks of gestation [12]. Reason for preterm delivery was also noted in self-structured questionnaires.

SPSS 24.0 was used for statistical analysis (IBM Corporation, Armonk, New York, United States). Continuous variables were evaluated using descriptive statistics and displayed as means and standard deviations (SDs), whilst categorical data was displayed as frequency and percentage.

RESULTS

71.4% of all patients reported with abruptio placentae were unbooked. The most age group was 20-29 years and most participants had a parity between 1-3 (table 1).

154 (40.1%) participants had preterm delivery. Preterm delivery was significantly higher in participants with parity more than 3 (p value < 0.0001). There was no difference in frequency of preterm based on age and status (table 2).

Table 1: Demographics of Participants

Characteristics	Frequency of Abruptio Placentae (%)
Status	
Booked	110 (28.6%)
Unbooked	274 (71.4%)
Age	
< 20 years	101 (26.3%)
20-29 years	154 (40.1%)
30-35 years	107 (27.8%)
< 35 years	22 (5.7%)
Parity	
0	125 (32.5%)
1-3	188 (48.9%)
more than 3	71 (18.4%)

Table 2: Stratification of participants with preterm delivery

Characteristics	Preterm Frequency (%)	P value
Status		
Booked	52 (33.7%)	0.06
Unbooked	102 (66.2%)	
Age		
< 20 years	48 (31.1%)	0.1
20-29 years	56 (36.3%)	
30-35 years	45 (29.2%)	
< 35 years	5 (3.2%)	
Parity		
0	41 (26.6%)	<0.0001
1-3	65 (42.2%)	
more than 3	48 (31.1%)	

DISCUSSION

Our study indicates high prevalence of preterm deliveries in participants with abruptio placentae. The result was comparable with work of Ananth CV et al. that indicated that 39% of participants with abruptio placentae had preterm delivery and the most common cause of preterm delivery was preterm labor [13]. Various other studies have reported variable prevalence of preterm between 20% to 40% [14]. Women with abruption were at substantially increased risk for preterm labor when compared with those with premature rupture of membranes or medical indication for preterm delivery. Similar results were reported in another study based on a national database [13].

Other than abruptio placentae, various other pathologies related to placenta such as infection and placental insufficiency have been linked with preterm birth [15]. Women diagnosed with abruption are at 4–6-fold increased risk of delivering at preterm gestations. It is believed that release of thrombin because of decidual-placental hemorrhage and hemosiderin deposition—both commonly found in the setting of abruption—triggers labor leading to preterm delivery [16].

Chronic, subacute decidual hemorrhage (i.e., abruptio placentae and retrochorionic hematoma formation) is an important contributor to preterm parturition. Such hemorrhage induces thrombin from decidual tissue factor, which play a pivotal role in the development of preterm premature rupture of membranes and preterm delivery by acting through protease-activated receptors to promote the production of pro-inflammatory cytokines, and matrix-degrading metalloproteinases [17].

Management of suspected placental abruption should include prompt assessment of maternal and fetal status, and a subsequent individualized management algorithm based on severity of disease, underlying etiology, and

gestational age. In severe cases of placental abruption with life-threatening hemorrhage, maternal hemodynamic stabilization is the priority [17].

This study adds to very limited data available related to complications associated with placenta abruptio, with focus on preterm delivery. However, the study has its own limitations. First, since the study was conducted in a single city, the demographics was less diverse. Secondly, since most of the participants were unbooked and we had no history, the cause of their placental abruption could not be definitely determined.

CONCLUSION

Preterm deliveries are very prevalent in pregnant women presenting with abruptio placentae. Booked participants who are at risk of abruptio placentae should be monitored more closely and they should be made aware of the possible complication of preterm delivery associated with abruptio placentae. Furthermore, effort should be made to increase the reach of antenatal care to reduce the number of unbooked pregnant women reaching tertiary care hospitals with complications.

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