RISK FACTORS AND COMPLICATIONS OF PLACENTAL ABRUPTION AMONG PATIENTS PRESENTING WITH ANTEPARTUM HEMORRHAGE

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ABSTRACT

BACKGROUND: Ante partum hemorrhage is defined as bleeding from genital tract occurring from twenty four weeks of gestation till the end of pregnancy. This study was conducted to determine the frequency of placental abruption, its risk factors and complications among patients with anti partum haemorrhage.

METHODS: This descriptive cross section study was conducted at Obstetrics and Gynecology Department, Khyber Teaching Hospital, Peshawar, from 26-07-2011 to 01-05-2013. 334 patients were included in the study, using WHO software for sample size estimation. Permission was taken from the hospital ethical committee. Data was collected from all those patients who were received with ante partum hemorrhage. Examination including general physical examination, abdominal and obstetrical examination was done. All those patients among whom placental abruption was detected, were followed throughout pregnancy and labour including postpartum period to detect the occurrence of postpartum hemorrhage.

RESULTS: Frequency of placental abruption among patients presenting with antepartum hemorrhage was 20.7%. mean age of the patients was found to be 29 years. Mean period of gestation was almost 32 weeks. Gravidity was more than 4 and parity was found to be 3. Postpartum hemorrhage was found in 3% of the patients.

CONCLUSION: Abruptio placentae represents a potentially serious obstetric problem that tends to threaten maternal health. It leads to serious maternal complication of postpartum hemorrhage.

KEY WORDS: Antepartum hemorrhage, Placencental abruption, and Postpartum hemorrhage.

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INTRODUCTION

Ante partum hemorrhage is defined as bleeding from genital tract occurring from twenty four weeks of gestation till the end of pregnancy[1]. It occurs in 0.5 to 5% of all pregnancies and is one of the most common emergencies in obstetrics[2]. Placental abruption is one of the leading causes of third trimester bleeding[3]. In 30% of the cases third trimester bleeding is due to placental abruption[4]. Placental abruption is defined as bleeding following premature separation of normally attached placenta from twenty four weeks of gestation to the delivery of the baby[5]. It can lead to considerable maternal and perinatal morbidity and mortality.

The maternal effects depend upon its severity[7]. These are hemorrhagic shock, generalized coagulopathy and ischemic necrosis of the organs like kidneys, hepatic, adrenal and pituitary, uterine apoplexy or couvelaire uterus which leads to postpartum hemorrhage[7].

There are two forms of placental abruption depending upon whether the type of hemorrhage is concealed or external. Concealed hemorrhage occurs in 20% of the cases in which the hemorrhage is confined to the uterine cavity; placenta may be completely detached and in this case complications are usually sever. Most common complications in this case are coagulopathy and fetal death. External hemorrhage occurs in 80% of the cases. In this case blood comes out through cervix, detachment of placenta may be incomplete and complications are less severe. In rare cases placenta may be separated only at the margin, here most common complication is the preterm labor[8].

The frequency of placental abruption was found to be 4.4% in a study performed in department of Gynecology and Obstetric unit B of Ayub Teaching hospital Abbotabad, postpartum hemorrhage occurred in 18.9%[9].

Although in majority of cases the causes of placental abruption are known but still its increased frequency is an issue of concern for obstetricians[9].

Antepartum hemorrhage is not uncommon in our population and placental abruption if left undiagnosed can lead to complications like cesarean section,premature rupture of membranes and postpartum hemorrhage.

This has compelled me to carry out this study to develop local statistics of placental abruption along with its common maternal complications. The results are shared with gynecologists and obstetricians and suggestions are made for timely and proper management of patients with placental abruption.

MATERIAL & METHODS

The study was conducted in Obstetrics and Gynecology Department, Khyber Teaching Hospital, Peshawar

from 26-07-2011 to 01-05-2013. Total 334 patients were included in the study according to the sample size under WHO software for size determination. Permission was taken from the hospital ethical committee. All pregnant women presenting with antepartum hemorrhage after 28 completed weeks of gestation and before 37 completed weeks of gestation, of age group 15-45 years and of any gravidity and parity were included in the study.

Exclusion Criteria was patients having History of genital tract trauma during delivery. Retained placenta for more than 30 minutes and uterine inversion detected on physical examination leading to postpartum hemorrhage.

Data was collected from all those patients who were received with antepartum hemorrhage. An informed written consent was taken from all the patients or their relatives. A detailed history about the age, parity, and period of gestation, booking status, obstetrical and past surgical and medical history was taken. Examination including general physical examination, abdominal and obstetrical examination was done. All those patients in among whom the placental abruption was detected was followed throughout pregnancy and labour including postpartum period to detect the postpartum hemorrhage. All the observations were done under supervision of an expert obstetrician.

All the ultrasounds were done through expert sonologist and strict exclusion criteria was followed so that to control confounders and bias in our study results.

All collected information was analyzed via software SPSS version 10. Means±standard deviations were calculated for continuous variables e.g age, parity.

Proportions and frequencies were calculated for categorical variables like placental abruption and its complication i.e. postpartum hemorrhage. Results were presented in the form of tables.

RESULTS

DISCUSSION

The result of present study indicates a much higher than expected frequency of abruption placenta in our setting. This is comparable to a study carried out in india where the incidence of placental abruption was 29.5% among patients presented with antepartum hemorrhage[10]. We have

TABLE 1: DESCRIPTIVE STATISTICS (N=334)

	N	Minimum	Maximum	Mean	Std. Deviation
Age	334	16.00	42.00	29.0599	6.06986
Parity	334	.00	13.00	3.0000	2.53030
Gravida	334	1	15.00	4.4401	2.78903
Period of gestation	334	28.00	36.00	32.9611	2.77618

TABLE 2: FREQUENCY OF PLACENTAL ABRUPTION AND PPH

		Count	Percentage
Placental abruption	Yes	69	20.7
	No	265	79.3
PPH	Yes	10	03.0
	No	324	97.0

TABLE 3: AGE GROUPS * PLACENTAL ABRUPTION AND PPH

		Age (in years)							
		<= 20.00		21.00 - 30.00		31.00 - 40.00		41.00+	
		%	Count	%	Count	%	Count	%	Count
Placental abruption	Yes	21.2%	7	16.6%	29	26.6%	33	.0%	0
	No	78.8%	26	83.4%	146	73.4%	91	100.0%	2
PPH	Yes	9.1%	3	.6%	1	4.8%	6	.0%	0
	No	90.9%	30	99.4%	174	95.2%	118	100.0%	2

TABLE 4: PARITY GROUPS * PLACENTAL ABRUPTION, AND PPH

		Parity					
		<= 5.00		6.00 - 9.00		10.00+	
		%	Count	%	Count	%	Count
Placental abruption	Yes	18.5%	51	30.2%	16	40.0%	2
	No	81.5%	225	69.8%	37	60.0%	3
PPH	Yes	2.5%	7	5.7%	3	.0%	0
	No	97.5%	269	94.3%	50	100.0%	5

TABLE 5: PERIOD OF GESTATION GROUPS * PLACENTAL ABRUPTION & PPH

		Period of gestation			
		<= 32.00		33.00+	
		%	Count	%	Count
Placental abruption	Yes	22.9%	33	18.9%	36
	No	77.1%	111	81.1%	154
PPH	Yes	1.4%	2	4.2%	8
	No	98.6%	142	95.8%	182

a higher frequency because being a tertiary care unit we receive high risk cases and also because of illiteracy our patients have no concept of antenatal check up so that high risk cases can be identified in time. It can be said that the frequency obtained in this study is representative of this province.

Advanced maternal age and multiparity have been associated with an increased risk for placental abruption. However, they often are interrelated, and studies have produced inconsistent results. Although some studies have found women of advanced maternal age (but not parity) to be at an increased risk for abruption,[11,12,13,14]. Others have demonstrated that parity plays an important role in the etiology of placental abruption[15,16]. On the contrary, the U.S. Perinatal Collaborative Project performed from 1959 to 1966 and a population-based study failed to show a relationship between placental abruption and either maternal age or parity[17].

There is relatively high risk of placental abruption with increasing maternal age. Mean age of patient with placental abruption in my study is 29 years. This is comparable to a study carried out in Hyderabad Sindh where placental abruption is more common in young age group i.e. mean age of less than 25 years[18]. However studies carried out in Finland shows increase incidence in patients with advanced maternal age of more than 35 years[19]. Younger mothers fronting the dilemma of placental abruption may be an indicator of unique socioeconomic barriers faced by these young women in accessing skilled care.

Multiparity is considered as a risk factor for placental abruption. In 1996, Ananth and colleagues demonstrated by using population-based cohort data from Nova Scotia, Canada those young, multiparous women (aged 20–24 years and parity of 3 or higher) were at a 3.2-fold increased risk for abruptio placentae compared with nulliparous women aged 25–29 years[20]. In my study most of the patients has parity of 6 or more. Multiparity particularly grandmultiparity has been specified as a factor predisposing to increased frequency of placental abruption. This is comparable to a study carried out in Abbottabad where the multiparous and grand multiparous women were 49% and 39.6% respectively[9]. So present study supports multiparity as a risk factor for placental abruption. This may be because of the reason that increasing parity may be giving a sense of false scrutiny to these patients on the view of previous uneventful deliveries and they are unaware of the problem that they can face because of increasing parity. This is contrary to the state in developed countries. A study in Thailand showing increase incidence in primigravida which was 52%[21].This may be due increase trend of smoking and stress in pregnant patients which are the important contributory factors in the development of placental abruption.

In my study maternal complications associated with placental abruption was PPH. 3% of patients went into PPH. In Thailand 2.9% patients went into hemorrhagic shock.16.5% of PPH was due to couvelaire uterus[21]. This is comparable to a study carried out in Hyderabad in which the frequency of PPH was 3%[19]. It is a potentially life threatening complication of placental abruption and is the leading cause of preventable deaths world. It causes maternal morbidity in developed countries and is the leading cause of death in developing countries. If not managed properly and timely patient can develop complications like hypovolumic shock acute renal failure and even death. Those who survive may become anemic and fatigued which may make maternal care of the newborn difficult. Patient may develop Sheehan's syndrome and failure of lactation and infertility.

CONCLUSION

To conclude, there is no doubt that abruptio placentae represents a potentially serious obstetric problem that tends to threaten maternal health and wellbeing. Postpartum hemorrhage is a serious complication which occurred in 3% of the patients presented with postpartum hemorrhage. Increasing maternal age, grand multiparity are the risk factors adding to the increased rates of placental abruption. More women prefer and seek care at primary health centers, TBA, and home deliveries which are affordable but more risky. It is essential that all efforts should be made to prevent the occurrence of this condition and its complications in the first place. Maternal prognosis may improve if antenatal, intra-partum care is available near women's home and are affordable. Continued education should be provided to the staff in providing care so that they are able to recognize the problem in time and refer to higher centers.

REFERENCES

1. Augius JC, Custo R, Brincat MP, Calleja N. Placental abruption and placenta praevia. Eur Clinics Obstet Gynaecol. 2006;2(3):121-7.
2. Sheikh F, Khokhar SA, Sirichand P, Shaikh RB. A study of antepartum hemorrhage: Maternal and Perinatal outcomes. Medical Channel. 2010; 16(2):268-71.
3. Qamarunisa, Memon H, Ali M. Frequency, maternal and fetal outcome of abruptio Placenta in a rural Medical College Hospital, Mirpurkhas Sindh. Pak J Med Sci. 2010;26(3):663-6
4. Decherney AH, Nathan L, Goodwin TM, Laufer N. Current Diagnosis and Treatment: Obstetr Gynaecol. 2007;10:330-1.
5. Abbasi RM, Rizwan N, Mumtaz F, Farooq S. Feto Maternal Outcome Among Abruptio Placentae Cases at a University Hospital of Sindh. J Liaquat Univ Med Health Sci. 2008;106-9.
6. Iffy L, Kaminetsky HA. Principles and practice of obstetrics & perinatology. New York: John Wiley & Sons; 1981.
7. Oyelese, Yinka MD, Ananth, Cande V. Placental Abruption. Obstet Gynecol. 2006;108(4):1005-16.
8. Scearce J, Uzelac PS. Third-Trimester Vaginal Bleeding. Current Diagnosis & Treatment Obstetrics Gynaecol. 2007;10:330-5.
9. Sarwar I, Abbasi AUN, Islam A. Abruptio Placentae and its complications at Ayub Teaching Hospital Abbottabad. J Ayub Med Coll Abbottabad. 2006;18(1):27-31.
10. Singhal SR, Nymphaea, Nanda. S. Maternal And Perinatal Outcome In Antepartum Hemorrhage: A Study At A Tertiary Care Referral Institute. The Int. J. Gyneco. Obst. 2008 9 (2). DOI: 10.5580/1b6. 2013. Feb.10.

11. Eriksen G, Wohlert M, Ersbak V. Placental abruption: A case-control investigation. Br J Obstet Gynaecol. 1991 Feb;98(1):448-53.

12. Meyer MB, Jonas BS, Tonascia JA. Perinatal events associated with maternal smoking during pregnancy. Am J Epidemiol. 1976 Feb;103(3):464-72.

13. Naeye RL, Harkness WL, Utts J. Abruptio placentae and perinatal death: A prospective study. Am J Obstet Gynecol. 1977 Apr;128(3):740-9.

14. Williams MA, Lieberman E, Mittendorf R. Risk factors for abruption placentae. Am J Epidemiol. 1991 May;134(3);965-73.

15. Hibbard BM, Hibbard ED: Aetiological factors in abruptio placentae. Part I: Epidemiology BMJ. 1963;2(1):1430-8.

16. Paterson MEL: The aetiology and outcome of abruptio placentae. Acta Obstet Gynecol Scand. 1979 Aug;58(1):31-9.

17. Gabbe SG, Niebyl JR, Simpson JL. Obstetrics: normal and problem pregnancies. 3rd edn. New York: Churchill Livingstone; 1996.

18. Bibi S, Ghaffar S, Pir MA, Yousfani S. Risk factors and clinical outcome of placental abruption: a retrospective analysis. J Pak Med Assoc. 2009 Oct; 59(10): 672-4.

19. Toivonen S. Phenotypic diversity and genetic epidemiology of placental abruption [Ph. D thesis on internet]. Department of Obstetrics and Gynaecology Kotka Central Hospital FI-48210 Kotka, Finland. 2009. [cited 2013 Mar 24]. Available from: Kuopio University Library/ www.uku.fi/kirjasto/julkaisutoiminta/julkmyyn.shtml

20. Ananth CV, Wilcox AJ, Savitz DA: Effect of maternal age and parity on the risk of uteroplacental bleeding disorders in pregnancy. Obstet Gynecol. 1996 Aug;88(1):511-9.

21. Pitaphrom A, Sukcharoen N. Pregnancy outcomes in placental abruption. J Med Assoc Thai. 2006 Oct; 89 (10): 1572-8.

CONFLICT OF INTEREST

Authors declared no conflict of interest

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Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.