ORIGINAL ARTICLE

ASSOCIATION BETWEEN PLACENTAL ABRUPTION AND CAESAREAN SECTION AMONG PATIENTS AT KHYBER TEACHING HOSPITAL PESHAWAR

Seema Gul, Saidul Abrar*, Tanveer Jamal, Gul e Rana, Anam Majid, Madiha Iqbal
Department of Gynaecology & Obstetrics, Khyber Teaching Hospital, Peshawar, *Department of Community Medicine, Women Medical College Abbottabad-Pakistan

Background: Ante partum haemorrhage remains to be a major cause of morbidity and mortality.30% of this haemorrhage is attributed to placental abruption. Along with other adverse maternal outcomes, it increases the risk of Caesarean sections in patients, which is a public health concern. This study was conducted to find out whether any significant association exists between placental abruption and C-section in our set up. **Methods:** A cross-sectional study was conducted from July 26th, 2011 to May 1st, 2013 (i.e., 21 months) in the Department of Obstetrics and Gynaecology, Khyber Teaching Hospital Peshawar on a sample of 334 patients who presented with antepartum haemorrhage after 28 weeks of gestation. All those patients with and without placental abruption were followed throughout pregnancy and labour to detect the risk of caesarean section. **Results:** Among study participants, parity had the highest dispersion while gestational age had the lowest. Caesarean section was performed on 26.3% (95% CI) of the study participants. Proportion of placental abruption among patients presenting with ante partum haemorrhage was 20.6%, (95% CI) out of which 7.5% underwent C-section. Association between placental abruption and C-section was found significant at α=0.05 (p=0.03). **Conclusion**: Risk of caesarean section is increased in pregnancies complicated by placental abruption as compared to pregnancies complicated by other causes of ante partum haemorrhage.

Keywords: Association, Abruptio placentae, Caesarean section, Pakistan, Peshawar
J Ayub Med Coll Abbottabad 2016;28(1):172–4

INTRODUCTION

Antepartum haemorrhage (APH) continues to be a major cause of morbidity and mortality even in modern days. It is one of the most frequent emergencies in obstetrics occurring at a prevalence of 0.5–5%.[1] Ante partum haemorrhage is defined as bleeding from genital tract occurring from twenty four weeks of gestation till the end of pregnancy.[2] Whereas up to 20% of these bleeding episodes have been attributed to placenta previa and 30% to placental abruption, at least half are of undetermined etiology.[3] 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. It can lead to considerable maternal and perinatal morbidity and mortality.[4] The condition is more common with increasing age and parity[5] and maternal effects depend upon its severity[6]. These effects may include haemorrhagic shock, generalized coagulopathy and ischemic necrosis of the organs like kidneys, hepatic, adrenal and pituitary, uterine apoplexy or couvelaire uterus which leads to postpartum haemorrhage.[7]

Caesarean section is associated with significant maternal morbidity and mortality. Caesarean section causes reduction in family size and can lead to complications in subsequent pregnancies. Associations have been studied between previous C-sections and subsequent ectopic pregnancy, placenta previa, placental abruption, placenta accreta and uterine rupture.[8–11] The objective of this study is to know whether any significant association exists between placental abruption and caesarean sections in our setup. Results will be shared with gynaecologists and obstetricians and in case of non-significant results, proper management of patients with placental abruption through modalities other than caesarean sections can be considered.

METERIAL AND METHODS

This analytical cross-sectional study was conducted in the Obstetrics and Gynaecology Department, Khyber Teaching Hospital, Peshawar from July 26th, 2011 to May 1st, 2013, i.e., 21 months. A sample size of 334 (calculated using WHO software), was obtained using random numbers table. Ethical approval was granted by the ethical committee of Khyber Teaching Hospital Peshawar.

All pregnant women presenting with antepartum haemorrhage after 28 completed weeks of gestation, of age group 15–45 years and of any gravidity and parity were included in the study. Patients having history of previous Caesarean section, cephalopelvic disproportion, abnormal lie and presentations, and placenta previa were excluded.

Data was collected from all those patients who were received with antepartum haemorrhage. An informed written consent was taken from all the patients or their relatives. A detailed history of the age, parity, period of gestation, booking status, obstetrical, past surgical and medical was taken. General physical, abdominal and obstetrical examinations were done. All qualified patients with or without abruptio placentae were observed till labour to know whether they underwent caesarean section or not. All observations were made under the supervision of an expert obstetrician.

Data was analysed using SPSS version 16. Descriptive statistics like mean and standard deviation were calculated for continuous variables while percentage and frequencies were calculated for categorical variables. Odd ratios, and 95% confidence intervals were calculated while chi-square test at 5% level of significance was applied.

RESULTS

This study was conducted on 334 participants. The mean age of the participants was 29 years SD±6.06 with mean parity of 3 SD±2.5 (Table-1)

C-section was performed on a total of 88 (26.3%) patients. Twenty-five (7.5%) patients had placental abruption and underwent C-section as well. While 246 (73.6%) patients did not undergo C-section. Forty-four (13.1%) patients had placental abruption but did not undergo C-section.

C-section was performed on a total of 88 (26.3%) patients. 25(7.5%) patients having placental abruption underwent C-section. While 246 (73.6%) patients did not undergo C-section (Figure-1)

Of the total 69 patients having abruption placenta, C-section was performed on 25 (36.23%) of the patients with placental abruption, while 44(13.1%) patients having placental abruption were managed without C-section. 63(23.77%) of the patients without placental abruption eventually had to underwent C-section (Figure-2). Statistically significant association (p=0.03) was found between abruption placenta and C-section (Table-2)

Table-1: Descriptive statistics

Variables	Mean	Range	SD	Coefficient of variation
Age in Years	29	16–42	6.06	20.8%
Parity	3	0–13	2.5	83%
Gravidity	4.4	1–15	2.78	63%
Gestational age in weeks	32.9	28–36	2.77	8.4%

Table-2: Inferential Statistics for association b/w abruption placentae and C-section

Statistical Test/measure	Value	Result
Chi square (Critical value=3.84)	4.37	Significant
p-value	0.03	Significant
Odd ratios	1.8	
95% Confidence Interval	1.03-3.2	Significant

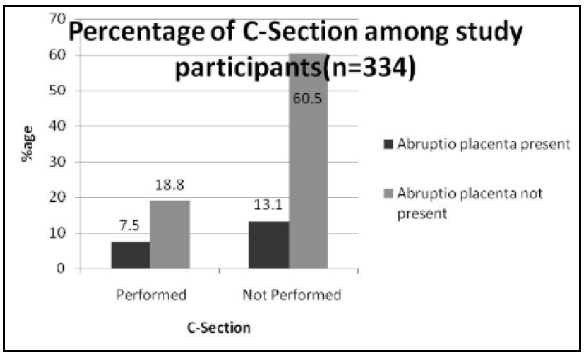

Figure-1: Percentage of C-section among study participants

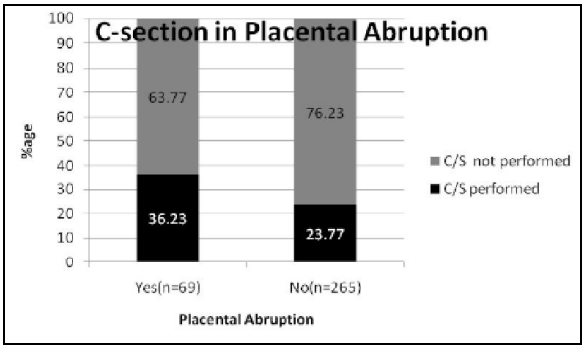

Figure-2: C-Section in placental abruption

DISCUSSION

Results of this study showed that among all participants, parity had the highest dispersion while gestational age had the lowest (Table-1). Gestational age is not under individuals control so we observed uniformity. As for as parity is concerned, there is no regulation in Pakistan that determines number of children, and women don't enjoy the autonomy of decision making regarding their reproductive health and birth spacing.[12] Global rate of caesarean section is unknown but it is a fact that its trend is increasing.[13,14]

In the UK , USA and sub Saharan Africa, its rate is up to 22%[15] .According to this study, caesarean section was performed on 88 (26.3% with 95% CI: 21.58% to 31.02%) of the study participants (Figure-1).

Abruption placenta was found among 69 (20.6%) of the participants (Figure-1).This was comparable to a study carried out in India where the incidence of placental abruption was 29.5% among patients presenting with antepartum haemorrhage.[16]

On the contrary, a study by Oyelese and Ananth *et al* show the proportion of placental abruption as 3.8% and 2.12% of pregnancies in different settings outside Pakistan.[17] High proportion in our study might be attributed to the strict inclusion/exclusion criteria not counting all pregnancies but only those with ante partum

haemorrhage. The same study by Oyelese and Ananth *et al* communicates that the incidence of placental abruption is highest at 24–26 weeks of gestation and drops with advancing age while in this study, all participants were equal to or above 28 weeks of gestation (Table-1).

A study conducted in Thailand shows that 84% of patients with placental abruption underwent C-section.[18] According to a study.[19] conducted in Hyderabad, Pakistan, 3.6% of the study participants had Abruptio placenta and out of those, 35.65% underwent C-section while another study[20] conducted at Abbottabad, Pakistan, 4.4% of the study participants had placental abruption and out of those, 30.2% underwent C-section, whereas in our study,20.6% of the participants had placental abruption and out of those,7.5% underwent C-section (Figure-1). However the proportion of C-section done on patient with placental abruption was higher than the proportion of C-section done on patient without placental abruption(Figure-2) and this difference was found to be statistically significant (Table-2). In other words, we can say that the difference observed in this study is real and not just by chance. We find a positive association between placental abruption and C-section.

CONCLUSION

There is little or no consensus among published literatures about the proportion of patients with placental abruption and performance of C-section. However risk of caesarean section is increased in pregnancies complicated by placental abruption as compared to pregnancies complicated by other causes of ante partum haemorrhage. Further studies with advanced designs are needed to know more about this research question in our set up.

AUTHOR'S CONTRIBUTION

SG principal investigator, data collection, literature search. SA: data analysis and write-up. TJ, GR, AM, MI, data collection, write-up.

REFERENCES

1. Sheikh F, Khokhar SA, Sirichand P, Shaikh RB. A study of antepartum haemorrhage: Maternal and Perinatal outcomes. Med Channel 2010;16(2):268–71.
2. Calleja-Agius J, Custo R, Brincat MP, Calleja N. Placental abruption and placenta praevia. Eur Clin Obstet Gynaecol 2006;2(3):121–7.
3. Sholl J. Abruptio placentae: Clinical management in non-acute cases. Am J Obstet Gynecol 1987;156(1):40–51.
4. Abbasi RM, Rizwan N, Mumtaz F, Farooq S. Feto Maternal Outcome Among Abruptio Placentae Cases at a University Hospital of Sindh. JLUMHS 2008;(2)106–9.
5. Kramer MS. Etiological determinants of abruption placenta. Turnbull's text book of obstetrics. 3rd Ed. 1997;220–1.
6. Oyelese, Yinka MD, Ananth, Cande V. Placental Abruption. Obstet Gynecol 2006;108(4):1005–16.
7. Scearce J, Uzelac PS. Third-trimester vaginal bleeding. Current Diagnosis and Treatment Obstetrics and Gynecology, 10th ed. New York: McGraw-Hill. 2007:328–41.
8. Larsson C, Källen K, Andolf E. Caesarean section and risk of pelvic organ prolapse: a nested case-control study. Am J Obstet Gynecol 2009;200(3):243.e1–4.
9. Hemminki E. Impact of caesarean section on future pregnancy–a review of cohort studies. Paediatr Perinat Epidemiol 1996;10(4):366–79.
10. Hemminki E, Merilainen J. Long-term effects of caesarean sections: ectopic pregnancies and placental problems. Am J Obstet Gynecol 1996;174(5):1569–74.
11. Souza JP, Cecatti JG, Faundes A, Morais SS, Villar J, Carolli G, *et al*. Maternal near miss and maternal death in the World Health Organization's 2005 global survey on maternal and perinatal health. Bull World Health Organ 2010;88(2):113–9.
12. Azmat SK, Ali M, Ishaque M, Mustafa G, Hameed W, Khan OF, *et al*. Assessing predictors of contraceptive use and demand for family planning services in underserved areas of Punjab province in Pakistan: results of a cross-sectional baseline survey. Reprod Health 2015;12(1):25.
13. Matthews TG, Crowley P, Chong A, McKenna P, McGarvey C, Regan MO. Rising caesarean section rates: a cause for concern? BJOG Int J Obstet Gynaecol 2003;110(4):346–9.
14. Stivanello E, Rucci P, Lenzi J, Fantini MP. Determinants of caesarean delivery: a classification tree analysis. BMC Pregnancy Childbirth 2014;14:215.
15. Eleje GU, Udigwe GO, Akabuike JC, Eke AC, Eke NO, Umeobika JC. The Rate of Caesarean Section in Nnewi, Nigeria: A 10-year Review. Afrimedic J 2010;1(1):11–4.
16. Singhal S, Nymphaea NS, Nanda S. Maternal And Perinatal Outcome In Antepartum Haemorrhage: A Study At A Tertiary Care Referral Institute. Internet J Gynecol Obstet 2008;9(2):5580.
17. Oyelese Y, Ananth CV. Placental Abruption. Obstet Gynecol 2006;108(4):1005–16.
18. Pitaphrom A, Sukcharoen N. Pregnancy outcomes in placental abruption. J Med Assoc Thai 2006;89(10):1572–8.
19. Dars S, Sultana F, Akhtar N. Abruptio Placentae: Risk Factors and Maternal Outcomes at a Tertiary Care Hospital. JLUMHS 2013;12(3):198–202.
20. Sarwar I, Abbasi Au, Islam A. Abruptio placentae and its complications at Ayub Teaching Hospital Abbottabad. J Ayub Med Coll Abbottabad 2006;18(1):27–31.

Address for Correspondence:

Dr. S. Abrar, Department of Community Medicine, Women Medical College Abbottabad-Pakistan
Cell: +92 321 910 3569
Email: abrardr@yahoo.com