Original Article

Association of Postpartum Hemorrhage in Obese Primigravidas

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Abstract

Objective: To determine association of postpartum haemorrhage in obese primigaravidas.
Study design: Case control study
Place and duration: Six months (1st June 2014 till 31st December 2014).
Methodology: This study was conducted at Obstetrics and Gynecology "B" Unit PGMI. Lady Reading Hospital Peshawar. A total of 154 (77 in each group) patients were observed by using postpartum haemorrhage occurred in 11% in non-obese, 30% in obese with odds ratio of 2.88. 95% confidence level and 80% power of test under WHO software for sample size determination. More over non probability consecutive sampling technique was used for sample collection.
Results: In this study mean age in cases group was 25.21 years with SD ± 2.73 whereas mean age in control group was 26.34 years with SD ± 3.56. the incidence of postpartum haemorrhage was analyzed as in cases group 30% patients had PPH as compare to control group 8% patients had PPH.
Conclusion: Our study concludes that the incidence of postpartum haemorrhage is higher among obese primigaravidas women as compare to normal weight women. And in addition to standard practice of active management of third stage labour there should be increased vigilance and preparation for Postpartum haemorrhage management in obese women.
Key Words: Postpartum Haemorrhage, Obese primigaravidas.

Introduction

Obesity is known to be associated with serious obstetric complications like hypertension, gestational diabetes mellitus, still birth, prolonged labour, meconium stained amniotic fluid, cesarean section, macrosomia and shoulder dystocia. Postpartum haemorrhage that occurs less than 24 hours after delivery is deemed as primary postpartum haemorrhage. The world Health Organization has estimated that postpartum haemorrhage causes 25% of maternal deaths in developing nations. Obesity is alarmingly increasing problem in Pakistan just as it in other countries, and there is an unequivocal increased incidence of poor labour outcome unfortunately both maternal and fetal, Obesity being an independent risk factor for postpartum haemorrhages.

Obesity is defined as body mass index equal or in excess of 30kg/m.[1] The world Health Organization (WHO) has declared obesity as a major killer disease of the mellineum.[2]

This is a problem with grave implication, more so because of an ever-increasing incidence globally. World Health Organization reports a prevalence of 17.1% in the developing world. In our country too it stands to be a major health hazard with an incidence

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as high 13.5%.[3]

Body mass index is defined as the individual body weight in Kilogram divided by the square of their height in meters.[2] World Health Organization recommends some international variations for the South Asian body type. The values recommended are normal from 18.5-22.9, overweight from 23-27.5 and obese from 27.6-40. Obesity is implicated as risk factors for the both maternal and fetal complications.[2] In the Northwest Themes study, the incidence of postpartum haemorrhage was 30% higher in overweight women and 70% higher in obese women[3].Obesity is considered an on independent risk factor for postpartum haemorrhage according to findings presented of the society for maternal fetal medicine 29th annual meeting.[4]

Postpartum haemorrhage is defined as a blood loss of more than 500ml after vaginal delivery and more than 1000ml in caesarean delivery occurs in up to 18% of births and is the leading cause of maternal mortality.[4,5]

Postpartum haemorrhage that occurs less than 24 hours after delivery is deemed as primary postpartum haemorrhage. The world Health Organization has estimated that postpartum haemorrhage causes 25% of maternal deaths in developing nations. The world Health Organization also estimated that not only is maternal mortality high but also approximately 20 million mother/ year suffer significant morbidity from Postpartum haemorrhage. According to study conducted at civil hospital Karachi in 2010 the frequency of postpartum haemorrhage was 45% in obese patients as compared to 11% in non-obese with odd ratio of 6.62. [6,7]

Obesity is alarmingly increasing problem in Pakistan just as it in other countries, and there is an unequivocal increased incidence of poor labour outcome unfortunately both maternal and fetal. Obesity being an independent risk factor for Postpartum haemorrhages, the rationale of study is that recommendation should be made that pregnancy with obesity is a high risk condition to make women understand the hazardous effect of obesity and pregnancies and protocols should be made for its management according to strict guidelines. In addition to active management of third stage labour there should be increased vigilance and anticipation for postpartum haemorrhage management in obese women.

Methodology

The case control study, non-probability consecutive sampling was conducted at dept. of obstetrics and Gynaecology “B” Unit PGMI. Lady Reading Hospital Peshawar from 1st June 2014 till 31st December 2014 Sample size was 77 in each group, using postpartum haemorrhage occurred in 11% in non-obese, 30% in obese with odds ratio of 2.88. 95% confidence level and 80% power of test under WHO software for sample size determination

Inclusion Criteria: All those primigravidas who are delivering in the labour room of gynae B unit LRH were assigned as cases and controls as follow.

Cases: All those labouring primigravidas who have BMI of more than 30kg/m^2.

Controls: All those labouring primigravidas who have BMI of more than 18-25kg/m^2

Exclusion criteria: Primigravida with:

Placenta previa detect on ultrasound, Diabetes (FBS>110), Hypertension (Blood pressure of more than 140/90) and history of Scarred uterus. The above factors are confounders and had made the study results biased if included.

There is association between postpartum haemorrhage and obesity. Approval was obtained from research and ethical committee Post Graduate Medical Institute Lady Reading Hospital Peshawar before starting the study. The study was conducted on the subjects admitted throughout patient department or emergency of Post Graduate Medical Institute Lady Reading Hospital Peshawar in the Department of Gynaecology and obstetrics who full fills the inclusion criteria.

Patients meeting inclusion criteria were assigned as cases and control. Cases were those labouring primigravidas who have BMI of more than 30kg/m^2 and controls were those labouring primigravidas who have BMI of 18-25kg/m^2.

The purpose of the study was explained to all patients and they were explained that the study is done for data complication and research purposes. And after their agreement written consent were obtained from them. In order to control the bias of parity only primigravidas were included in the study extreme care was take in selection of cases and controls to avoid selection bias. In both groups active management of third stage of labour was done and the frequency of postpartum haemorrhage was noted by measuring the amount of blood loss in graduated kidney try and all drapes were weighted after blood loss by taking 1 gram equal to 1ml. Data was collected on proforma which is attached.

The data was analyzed by using SPSS 12.0. Mean and standard deviation was computed for numeric variable like Age. Frequency and percentages was computed

for categorical variable like mode of delivery. Chi-square test was used to compare the postpartum hemorrhage in two groups. P value less than or equal to 0.05 was consider significant. Odd ratio was calculated as measure of association with calculation at 95% confidence interval. All the results were presented in the form of tables and charts.

Results

This study was conducted at Obstetrics and Gynecology "B" Unit PGMI. Lady Reading Hospital Peshawar in which a total of 154 (77 in each group) patients were observed to determine the association of postpartum haemorrhage in obese primigaravidas and the results were analyzed as:

Age distribution among two groups was analyzed as in cases group 31(40%) patients were in age range 20-25 years, 46(60%) patients were in age range 26-35 years. Mean age was 25.21 ± 2.73. Where as in control group 29(38%) patients were in age range 20-25 years, 48(62%) patients were in age range 26-35 years. Mean age was 26.34 ± 3.56. (As shown in table no I)

Table No. I. Age Distribution (n=154)

Age	Cases	Control
20 – 25 years	31(40%)	29(38%)
26 – 35 years	46(60%)	48(62%)
Total	**77**	**77**
Mean and SD	25.21 ± 2.73	26.34 ± 3.56

Chi square test was applied in which P Value was 0.002
Cases: All those labouring primigravidas who have BMI of more than 30kg/m2.
Controls: All those labouring primigravidas who have BMI of more than 18-25kg/m2

Mode of delivery among two groups was analyzed as in cases group 49(63%) patients had normal vaginal delivery and 28(37%) patients had cesarean section. Where as in control group 60(78%) patients had normal vaginal delivery and 17(22%) patients had cesarean section. (As shown in table no II)

Table No II. Mode of Delivery (n=154)

Mode of delivery	Cases	Control
Normal vaginal delivery	49(63%)	60(78%)
Cesarean section	28(37%)	17(22%)
Total	77	77

Chi square test was applied in which P Value was 0.002
Cases: All those labouring primigravidas who have BMI of more than 30kg/m2.
Controls: All those labouring primigravidas who have BMI of more than 18-25kg/m2

Incidence of postpartum haemorrhage among two groups was analyzed as in cases group 23(30%) patients had PPH and 54(70%) patients didn't had PPH. Where as in control group 6(8%) patients had PPH and 71(92%) patients didn't had PPH. (As shown in table no III)

Table No III. Postpartom Heamorrhage (n=154)

PPH	Cases	Control
Yes	23(30%)	6(8%)
No	54(70%)	71(92%)
Total	77	77

Chi square test was applied in which P Value was 0.003
Cases: All those labouring primigravidas who have BMI of more than 30kg/m2.
Controls: All those labouring primigravidas who have BMI of more than 18-25kg/m2
Relative Risk: 4.000 Odd ratio was: 4.92,
Confidence Interval: 95%

Discussion

Obesity has been declared by the World Health Organization as a pandemic nutritional disorder which is a rapidly growing threat to the health of population of an increasing number of countries worldwide.[8] In United States approximately 34% of the population is now overweight. In the United Kingdom a department of health survey reported that 32% of women age 16-64 years of age are overweight and 20% are obese. Thus almost two third of population in the United States and more than half of the adults in United Kingdom population are now either overweight or obese.[10]

The pandemic rise in obesity is mirrored in the number of women entering pregnancy. A study done in Scotland in 2002/2004 showed that 1 in 5 women booking for antenatal care are obese which is more than twice the incidence of a decade previously.[9] Samde is the case in United States where percentage of obese women in antenatal population rose from 16% to 36% from 1980 to 1999.

Our study show that in cases group 40 patients were in age range 20-25 years, 60% patients were in age range 26-35 years. Mean age was 25.21 ± 2.73. Where as in control group 38% patients were in age range 20-25 years, 62% patients were in age range 26-35 years. Mean age was 26.34 ± 3.56. In cases group 63% patients had normal vaginal delivery and 37% patients had cesarean section. Where as in control group 78% patients had normal vaginal delivery and 22% patients had cesarean section. More over the incidence of

postpartum haemorrhage in cases group was 30% while the incidence of PPH in control group was 8%.

Similar findings were observed in another study conducted at civil hospital Karachi in 2010 the frequency of postpartum haemorrhage was 45% in obese patients as compared to 11% in non-obese with odd ratio of 6.62. [1]

Similar finding were observed in another study conducted by Jalil et al[10] in which age was almost similar in both groups. Common age was 25.21±2.73 in group –A and 26.34 ± 3.56 years in group-B.

Bhattacharya S and Lederman S A found that postpartum haemorrhage was more frequently in obese women, the reason for postpartum hemorrhage in obese women is operative deliveries, also obesity is independent risk factor for PPH.[11,12]

Our results show that obesity is an important public health problem in Pakistan due to increasing prevalence of obesity in children and adults. The number of patients entering into pregnancy with obesity is increasing; therefore large studies are required to further investigate the results.

Conclusion

Our study concludes that the incidence of postpartum haemorrhage is higher among obese primigaravidas women as compare to normal weight women. So it is recommended that every pregnant woman who presents with increased BMI, should be sort out for maternal complications .However it is also required that every set-up should have their surveillance in order to know the frequency of the problem.

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