Nath, et al., Neonat Pediatr Med 2021, 7:S10

Neonatal and Pediatric Medicine

ISSN: 2572-4983

Research Article Open Access

A Study on Bad Obstetrics History with Special Emphasis on Etiological High-Risk Factors

Jayati Nath*, Sumita Malhotra and Neha Rani

Department of Obstetrics, Shree Guru Gobind Singh Tricentenary University, Gurugram, India

Abstract

Bad Obstetric History (BOH) is a challenging condition for both the couple and the attending obstetrician. Despite thorough investigation, a large number of such cases remain etiologically 'unexplained'. This hospital based, retrospective, analytical study was conducted to evaluate the risk factors both maternal and fetal and probable etiological factors in patients with Bad Obstetric History (BOH).

Keywords: Bad obstetric history; Pregnancy loss; Neonatal outcome; High risk pregnancy

Abbreviations: BOH: Bad Obstetric History; LBW: Low Birth Weight; NND: Neonatal Death; RPL: Recurrent Pregnancy Loss; PTL: Preterm Labour; APH: Antepartum Haemorrhage; APLA syndrome: Anti Phospholipid Antibody syndrome; PTB: Preterm Birth; PROM: Premature Rupture of Membrane; IUGR: Intrauterine Growth Restriction; NICU: Neonatal Intensive Care Unit; FGR: Fetal Growth Restriction; IUFD: Intrauterine Fetal Death

Introduction

A pregnancy loss can be a challenge for both the couple and the attending obstetrician-more so if it is recurrent [1,2]. In women with Bad Obstetric History, the underlying contributing factor is pinpointed in only about 40-50% cases and the rest are clubbed under 'unexplained' group in spite of detailed evaluation [1-3]. Antenatal women known as high risk for BOH are history of ≥ 2 consecutive spontaneous miscarriages, Intrauterine Fetal Death (IUFD) and still births, Fetal Growth Restriction (FGR) or fetal congenital anomalies and should be monitored accordingly [1,2]. The worldwide incidence of BOH is said to be around 1-2% [1-3] with a wide variation across different geographical areas. Studies have established the fact that any given pregnancy has a probability of ending in miscarriage is approximately 12-15% [1-4]. The risk of miscarriages increases with each miscarriage 30% after 2 losses, 33% after 3 losses among patients without history of a live birth [3,4]. Therefore it is very important to evaluate the patients with 2 pregnancy losses and no prior live births so as to understand the cause of BOH and treat accordingly.

The etiological factors of BOH is said to be multi-factorial including chromosomal abnormalities in the parents, anatomical or structural uterine anomalies, endocrinal imbalance, thrombophillias-inherited and acquired, APLA syndrome, immunological and environmental factors. However, almost one third of such cases do not have a known underlying cause, and are grouped under 'unexplained' etiology [1,5].

This study was undertaken to evaluate both the maternal and fetal risk-factors and outcomes of pregnancies with Bad Obstetric History.

Parental satisfaction towards the quality care given to their neonates is one of the indicators of the effectiveness and quality of services offered in NICU. Quality services are the main outcomes of the health system. Unless the parents satisfied, they will not believe and accept the recommended cares. Then after, they will not come back to health institution even if their neonates get sick which will ultimately contributed to neonatal morbidity and mortality. Despite these facts, quality care in NICU was not well studied from parental perspectives. Therefore, the main purpose of this study intended to assess quality of neonatal care from parents' perspective among parents whose neonates admitted to neonatal intensive care unit.

Materials and Methods

Hospital based, retrospective analytical study of antenatal women with BOH attending Obstetrics-OPD.

Study period

2 years (June 2019-June 2021)

Inclusion

≥ 2 consecutive spontaneous miscarriages

≥ 2 early neonatal deaths

≥ 2 Stillbirths

≥ 2 IUFD

≥ 2 FGR (IUGR)

≥ 2 congenital malformations in fetus

Combination of any ≥ 2 factors of the above.

Exclusion criteria

Induced Abortions/MTP

50 patients fulfilled the inclusion and exclusion criteria and were enrolled in the study after obtaining proper, written consent.

All the maternal high risk factors including medical disorders of pregnancy and other underlying causes were noted and analyzed.

Fetal outcomes especially prematurity, Fetal Growth Restriction

***Corresponding author:** Nath J, Department of Obstetrics, Shree Guru Gobind Singh Tricentenary University, Gurugram, India, E-mail: jayati.nath@yahoo.com

Received: August 14, 2021; **Accepted:** August 28, 2021; **Published**: September 11, 2021

Citation: Nath J, Malhotra S, Rani N (2021) A Study on Bad Obstetrics History with Special Emphasis on Etiological High-Risk Factors. Neonat Pediatr Med S10: 001.

(FGR), anomalies (structural/chromosomal), Inborn Errors of Metabolism (IEM), stillbirth, mode of delivery, birth weight, fetal distress, meconium stained liquor, APGAR score at birth, NICU admission etc were noted, tabulated and statistically analyzed by using SPSS-software.

Results and Discussion

In our study, we attempted to evaluate the underlying etiological factors in all our patients with BOH. In around 40-50% no etiology was found (unexplained). Even in couples with no identifiable underlying cause, only 50-70% pregnancies become viable and successful [1,2]. In our study, 10.5% women had no underlying identifiable medical condition contributing to their BOH. In our study, 28.00% babies were Low Birth Weight (LBW). Anand, et al. reported LBW in most of the patients with BOH with 4 times more chances of Low Birth Weight (LBW) (including IUGR and Preterm Birth) [6]. We report hypothyroidism (overt and subclinical) in 15 patients (30.00%) and 4% had hyperthyroidism. The overall worldwide incidence of hypothyroidism contributing to BOH is estimated to be 1%-10% [7,8]. We found 10 patients (20.00%) patients had hypertension and a study by Deodhar et al. and Surkan et al. reported HDP in 25.00% and 32% of patients with BOH [1,9,10]. 5 out of 50 patients were found to have past history of mid trimester abortion suggestive of cervical insufficiency and were thus given prophylactic Modified McDonald's cervical encirclage (Tables 1-4).

These will ultimately result in parental dissatisfaction. This justification partly evidenced in this study those parents with low monthly income were more dissatisfied compared to those have better monthly income.

The sample size for the study was computed using single population proportion formula with an assumption of 77% of parental satisfaction with quality of services in NICU, 5% marginal error to be tolerated and 95% confidence level. By considering 5% (12) of sample size for none response rate, the desired final sample size was 253. Consecutive sampling technique was used until the desired sample was reached in which all mothers or fathers whose neonate admitted at least for three days were involved just at the time of discharge. Parents not participate in caring of the neonates were excluded.

Variables	Mean	SD (±)
Age (years)	27.56	2.89
BMI (kg/m$^{2)}$	23.25	2.06
Parity	1.25	0.71
Birth weight (kg)	2.76	0.45

Table 1: Maternal parameters.

Condition	Number (n)	Percentage (%)
APLA Syndrome	4	6
Hypothyroidism	15	30
Hyperthyroidism	2	4
GDM	7	14
Pre eclampsia	10	20
TB	2	4
Hyperprolactinemia	6	12
Luteal phase defect	1	2
Parental chromosomal abnormalities	0	0
PROM	8	16
APH	3	6
Malpresentation	9	18
Cervical incompetence	5	10
Inborn error of metabolism	1	2
Unexplained	10	20

Table 2: Maternal complications (underlying etiological factors).

Mode of Delivery	Number (n)
Vaginal: Spontaneous Instrumental: {Forceps {Vaccuum	**27** 20 7 4} 3}
LSCS: {Elective {Emergency	**29** 12} 17}
Vaginal Birth After Cesarean (VBAC)	4
Total	**50**

Table 3: Mode of delivery.

Variable	Number (n)
Preterm Birth	13
IUGR/FGR (Fetal Growth Restriction)	4
Stillbirth	0
Meconium Stained Liquor (MSL)	16
Neonatal death	1
NICU admission	19
Low Birth Weight (LBW)	14

Table 4: Fetal outcome.

Male participants were more dissatisfied than those of female participants [(AOR (95% CI) 0.274 (0.80-.0.935)]. This is probably due to entering NICU ward and frequently following of their neonate is not allowed to males parents as that of females. Perceived hospital cost also found to be one of the contributing to parental dissatisfaction [(AOR (95% CI) 8.584 (2.255-32.763)]. This study finding is agreed with other study finding that sated the availability or not availability of equipments and drugs were showed significant impact on parental satisfaction (13). In the current study hospital partly due to the parents perceived as some necessary drugs and laboratory investigation were not found in the study hospital which leads them to buy from privates pharmacies and laboratories from which they may not afford. Perceived parents' involvement in care was found to have significant association with parental satisfaction. Those parents perceived they did not involve in the care of their neonate were more dissatisfied than their counterparts [(AOR (95% CI) 0.065 (0.024-0.176)]. This study is in line with study in Norway, Turkey and England in which parental involvement in the decision making processes regarding the care of infant had significant contribution towards the overall parental satisfaction towards quality care. This can be explained as the newborn are totally dependent, they cannot communicate their needs, they need strict and frequent follow up and the family understand their need more than any person, parents are interested and eager to be involved in each decision and care of their neonate.

The study revealed that the mean score of satisfaction was 61.69 with standard deviation of 11.187. Regarding to overall satisfaction, 131 (55%) and 107 (45%) of the parents were satisfied and dissatisfied respectively on the quality of care given to their neonates admitted to NICU. The aspects those highly contributed to parental dissatisfaction were availability of all the necessary investigations in the laboratory of the hospital (71%), availability of all the necessary drugs in the pharmacy of the hospital (63.8%), availability of special room for mothers to

express milk (81.1%), the opportunity they got to participate in discussions concerning their neonate's examinations (63%), satisfaction with consent and permission before procedures (52.1%), availability of enough chair in the waiting area (74.8%), opportunity to participate in discussions concerning neonate's examinations (63%) and the doctors explain on reason for medical test (69%).

APLA syndrome was diagnosed in 4 patients (8.00%). APLA syndrome has been established as an etiological factor in 10-40% of BOH cases worldwide [11].

Further evaluation of NND of unknown cause revealed the inborn errors of metabolism like Isovaleric acidemia and fatty acid oxidation defect in 4% of patients in our study [12].

In our study only 31 patients (62%) had an identified underlying condition responsible for BOH most probably and almost 19 patients (38%) were grouped under the 'unexplained' category [13-14].

Conclusion

Bad Obstetric History especially >2 recurrent spontaneous miscarriages require detailed evaluation so as to not only find out identifiable risk factor and underlying causes but also to prevent future adverse pregnancy outcomes. A large chunk of such cases remain 'unexplained' and further in depth research is required to unravel the mystery in such cases. Recent areas of interest are male factors contributing to Recurrent Pregnancy Loss (RPL) especially role of paternally expressed genes in trophoblastic invasion and placental proliferation which may affect the pregnancy in early embryogenesis etc.

References

1. Bhargavi AB, Sailatha R, Anuradha CR (2021) Changing trends of causative factors in antenatal mothers with bad obstetric history: A retrospective study. Int J Reprod Contracept Obstet Gynecol 10: 3371-3374.
2. Singh G, Sidhu K (2010) Bad obstetric history: A prospective study. Med J Armed Forces India 1237: 80121-80122.
3. Koppad C (2014) Recurrent Pregnancy loss and bad obstetric history: Immunological causes. J evidence based Med 1: 2086-99.
4. Devi R, Rajangam S, Sreenivas N. (2012) Optimizing parenteral nutrition to achieve an adequate weight gain according to the current guidelines in preterm infants with birth weight less than 1500 g: A prospective observational study. Int J Human Genetics 2:269-71.
5. Singh A (2017) An evaluation of recurrent pregnancy loss. IJRCOG 6:1332.
6. Anand K (2020) A study on factors affecting low birth weight. Ind J Comm Med 25:4-6.
7. Caple J, Armentrout D, Huseby V, Halbardier B, Garcia J, et al. (2004) Randomized, controlled trial of slow versus rapid feeding volume advancement in preterm infants. Pediatrics 114: 1597-1600.
8. Deodhar J, Jarad R (1999) Study of the prevalence and high risk factors for fetal malnutrition in term newborns. Ann Tropical Pedia 19:273-7.
9. Surkan PJ, Stephansson O, Dickman PW, Cnattingius S (2009) Previous preterm and small for gestational age births and subsequent risk of still births. N Eng J Med 350:777-85.
10. Abayneh M, Gebreyesus G, Girma A, Berhane M, Goldenberg RL, et al. (2020) Factors associated with the death of preterm babies admitted to neonatal intensive care units in ethiopia : A prospective, cross-sectional, and observational study. Glob Pediatr Heal 7: 233.
11. Smith GCS (2017) Maternal obesity in early pregnancy and risk of spont and elective preterm delivery. A retrospective cohort study. Am J Public Health 97: 157-162.
12. Franklin RD, Kutteh WH (2015) Postnatal growth curves for extremely low birth weight infants with early enteral nutrition. Hum Reprod 83: 684-690.
13. Vora S (1997) Screening of APLA syndrome in indian women with recurrent pregnancy loss. Eur J Obst Gyn Reprod Biol 137:136-140.
14. Wilcox G (2018) Impact of pregnancy on inborn errors of metabolism. Rev Endocr Metab Disord 19: 13-33.