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Research Article

**A STUDY ON THE DETERMINANTS OF BIRTH ASPHYXIA AT  
INDUS HOSPITAL MANAWAN LAHORE**<sup>1</sup>Dr Amna Riaz, <sup>2</sup>Dr Marrium Kamran, <sup>3</sup>Dr Rabia Anwar<sup>1</sup>Indus Hospital Manawan Lahore, <sup>2</sup>Indus Hospital Bedian Road Lahore, <sup>3</sup>Indus Hospital Manawan Lahore.**Article Received:** January 2019**Accepted:** February 2019**Published:** March 2019**Abstract:**

**Objective:** The objective of our research work was to study the factors of neonatal asphyxia at Indus Hospital Manawan Lahore.

**Patient and methods:** Our research study consist of ninety-seven newborn neonates all these patient were admitted in birth care unit of Indus Hospital Manawan Lahore from April 2018 to January 2019 the Apgar score of all these deliveries were low. The detailed maternal study was conducted; noted their ages, age of gestational, complexity & sedation at the time of labor. For numerical significance approach the Chi-squared ( $\chi^2$ ) test was conducted.

**Results:** 9602 live birth issue were rise in Indus Hospital Manawan Lahore from April 2018 to January 2019 the Apgar score of all these deliveries were less than seven at five minutes was 12.9/1000 live born issue; Seizures appeared in twelve out of ninety-seven newborn issue. There was no numerically consequential relation among neonatal asphyxia, serous asphyxia and neonatal weight, gestational age, parity of mothers and maternal disease. There were marked and significantly higher percentages of deliveries by emergency C-section among asphyxiated group compared to the control group.

**Conclusion:** Prematurity, intrauterine growth retardation, antepartum hemorrhage and maternal toxemia were associated with higher incidence of asphyxia. We propose further examinations to be done utilizing a substantial example estimate and including extra risk factors as absence of antenatal consideration and maternity specialist obstruction.

**Key Words:** Gestational, Apgar score, Perfusion, Antenatal, Neonate, Biochemically Asphyxia, Respiration.

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**INTRODUCTION:**

Asphyxia is humiliated to the embryo or infant due to deficiency of O<sub>2</sub> or deficiency of perfusion to various organs. It is confederated with tissue hypoxia & acidosis. Neonate may face with placental or the lungs abnormalities lungs as the organs of respiration. Biochemically asphyxia means acidosis, hypoxia and hypercapnia. With modern obstetric care only a small percentage of neonate babe are not pink and vigorous by 1-2 minutes of age. About 70 percent of neonate needing rebirth comes from probably high gamble condition such as the delivery of preterm neonate, or a term neonate who demonstrated signs of asphyxia at the time of 2<sup>nd</sup> phase of labor [1]. The frequency of neonatal asphyxia relates largely on the definition used to analyze the condition also the gestational age of the neonate. The frequency of neonatal asphyxia ranges between 3.7 / 1000 and 9 / 1000 live birth neonate. There appears to have been a significant reduction in the frequency of neonatal asphyxia in current years but only in grown-up newborn neonate. The objective of our research work to investigate the frequency of neonatal asphyxia in Indus Hospital Manawan Lahore and to evaluate chosen prenatal risk factors that may be dependable predictors of neonatal asphyxia

**MATERIAL AND METHODS:**

Our research study consists of ninety-seven newborn neonates all these patient was admitted in birth care unit of Indus Hospital Manawan Lahore from April 2018 to January 2019 the Apgar score of all these deliveries were low. The major principle for analysis of neonatal asphyxia in our research was having an Apgar (Pulse, Grimace, Activity, Respiration) score greater than 7 at 5 mint, with one or more of the beloved criteria:

1. Presence of meconium stained liquor.
2. Subsequent convulsions taking under 48hrs of neonatal.
3. Need for assisted ventilation by facemask & O<sub>2</sub> or endotracheal intubation.

During pregnancy we also study maternal history, noted their age, parity, gestational age, past delivery complications a sedation during labour. Apgar score of newborn immediately determined after birth at one, five and ten minutes. We were also determined the weight of neonate & level of consciousness. In

the duration of ten months 9602 live birth neonate born in this hospital, 102 natural infants with Pulse, Grimace, Activity, Respiration score greater seven at five mints were chose aimlessly as a control group with accurate information taken as already motioned for neonatal asphyxia group [2]. Following criteria was conducted for severe asphyxia: Pulse, Grimace, Activity, and Respiration score occur among zero to three at ten minutes (other causes of depression have been excluded).

1. The neonate remains hypotonic for few hours.
2. The nearness of birth seizures.

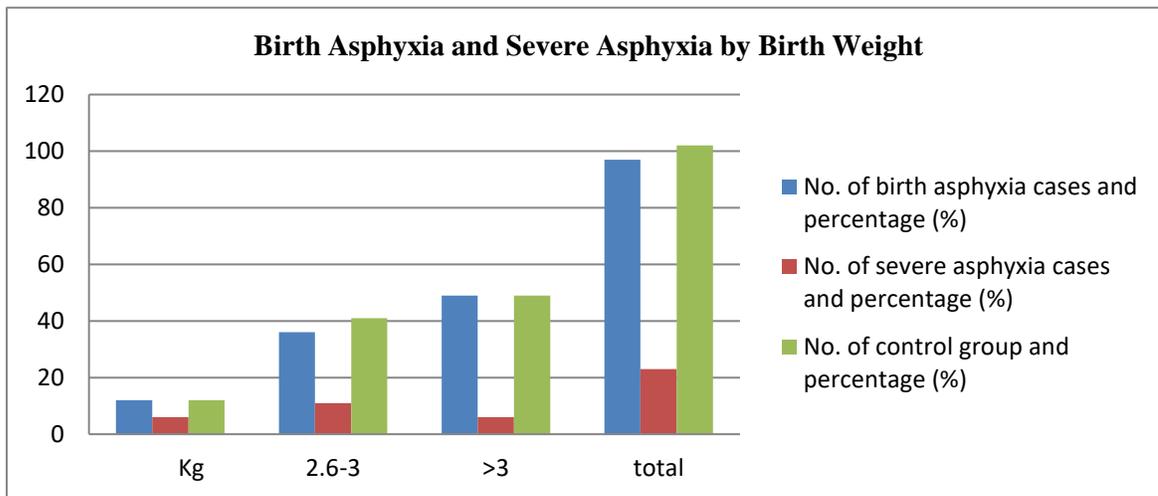
Chi-squared (x<sup>2</sup>) test was utilized to evaluate measurable significance. P-value was viewed as critical if under 0.05.

**RESULTS:**

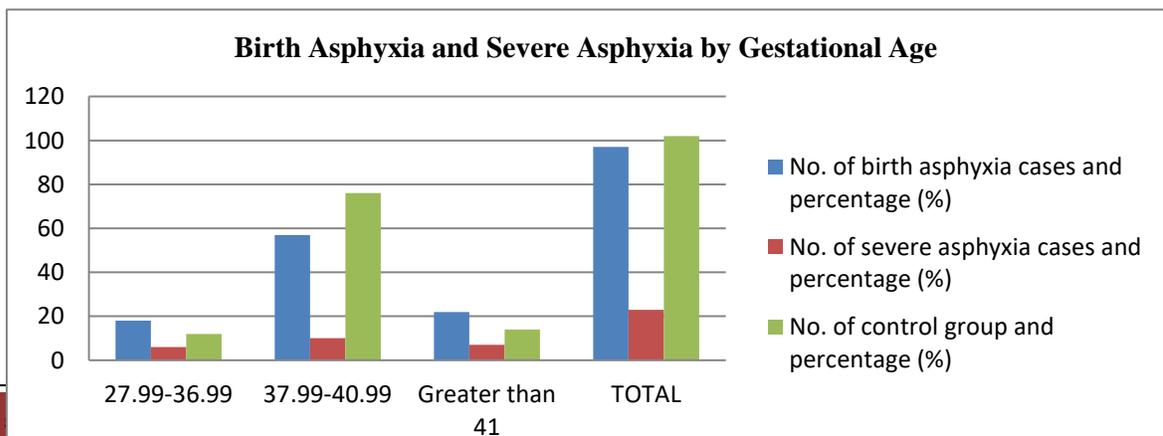
9602 live birth neonate were born in Indus Hospital Manawan Lahore from April 2018 to January 2019 the Apgar score of all these deliveries were low. Clinical signs of severe asphyxia were present in 23 newborn infants. The frequency of Apgar scores is less than seven at five minute was 12.9 / 1000 live born neonate & the frequency rates of neonatal asphyxia & server asphyxia were 10.1 / 1000 & 2.4 / 1000 live born neonate mutually. In ninety-seven neonates twelve was suffering Seizures, beginning in nine cases within 12hrs of neonatal. 22 out of ninety-seven neonates died due to Asphyxia. Other risk factor of neonate also investigates after delivery like neonatal asphyxia and severe asphyxia. There was no numerically important relation among neonatal asphyxia, severe asphyxia and birth weight (p is greater than 0.05) Table-I. Among neonatal asphyxia and in gestational age have no important relation (p<0.05), gestational age and severe asphyxia closely related with each other (p<0.05) Table-II. There was no serious relation among neonatal asphyxia (including severe asphyxia) and parity of mothers (p> 0.05) Table-III. There was marked and significantly higher percentages of deliveries by immediate C- section between dyspnea group with respect to the control group (33 percent of dyspnea group & 39.1 percent of severely dyspnea groups in comparison with 6.8 percent of control group) Table-IV. There was no serious interaction between neonatal asphyxia & maternal disease (p>0.05) Table-V.

**Table-I: Birth Asphyxia and Severe Asphyxia by Birth Weight**

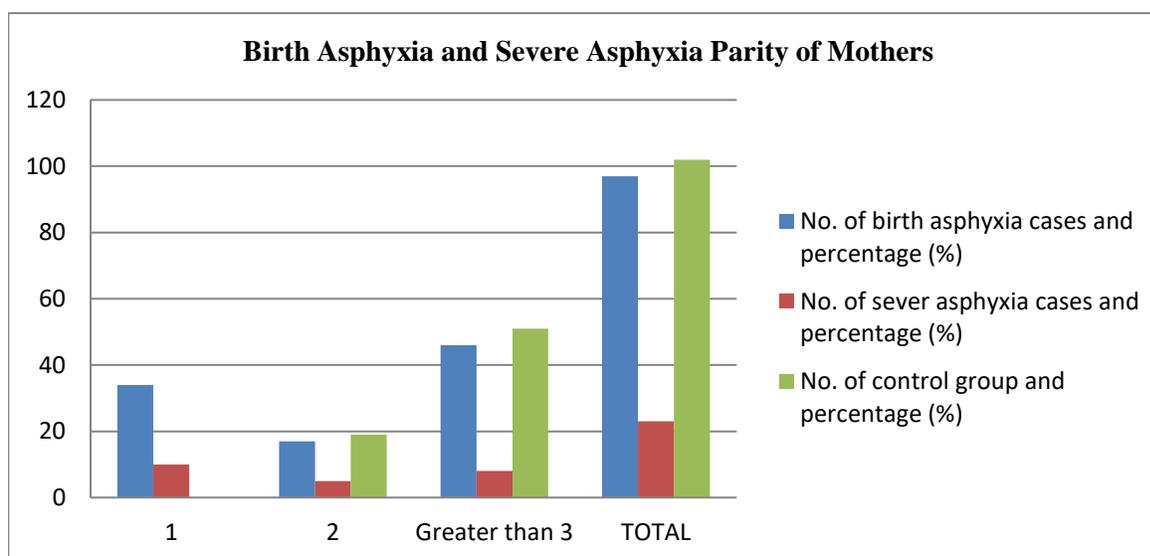
Birth weight Kg	No. of birth asphyxia cases and percentage (%)	No. of severe asphyxia cases and percentage (%)	No. of control group and percentage (%)
One to two.5	Twelve (12.40)	Six(26.11)	Twelve(11.6)
Two.60-three	Thirty six(37.11)	Eleven(48)	41(40.33)
Greater than three	Forty nine(50.55)	Six(26.1)	Forty nine(48.1)
TOTAL	Ninety seven(100)	23(100)	102(100)

**Table-II: Birth Asphyxia and Severe Asphyxia By Gestational Age**

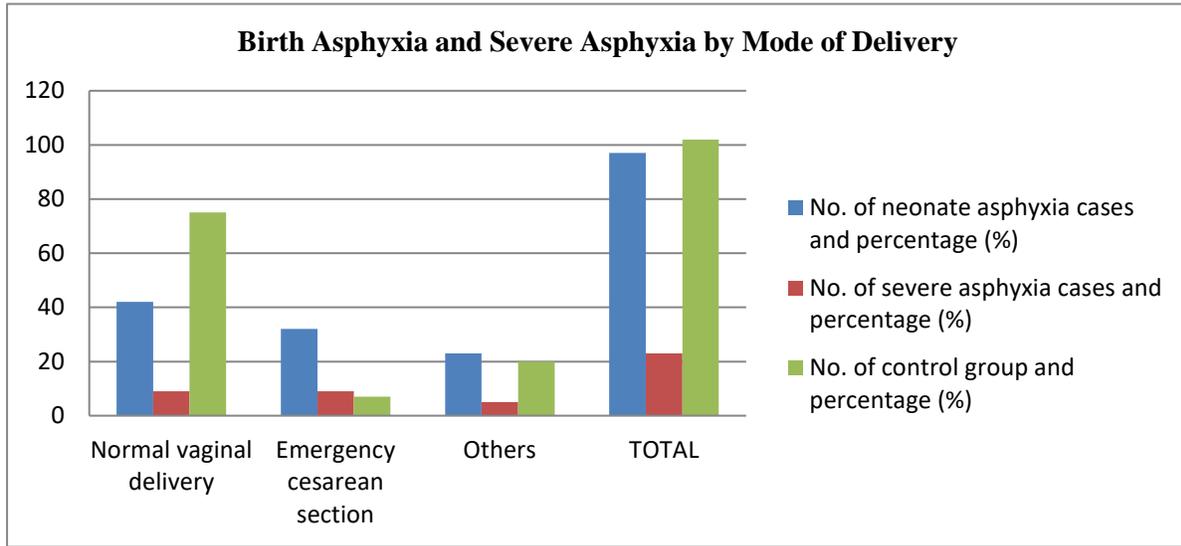
Gestational age (weeks)	No. of birth asphyxia cases and percentage (%)	No. of severe asphyxia cases and percentage (%)	No. of control group and percentage (%)
27.99-36.99	18.00(18.5)	6.009(26.10)	12.00(11.80)
37.99-40.99	57.00(58.80)	10.00(43.50)	76.00(74.50)
Greater than 41	22.00(22.70)	7.00(30.40)	14.00(13.70)
TOTAL	97.00(100)	23.00(100)	102.00(13.70)



Parity	No. of birth asphyxia cases and percentage (%)	No. of sever asphyxia cases and percentage (%)	No. of control group and percentage (%)
1	34(35.10)	10.00(43.50)	32.00(31.40)
2	17(17.50)	5.00(21.70)	19.00(18.60)
Greater than 3	46(57.40)	8.00(34.80)	51.00(50.00)
TOTAL	97.0(100)	23.00(100)	102.00(100)

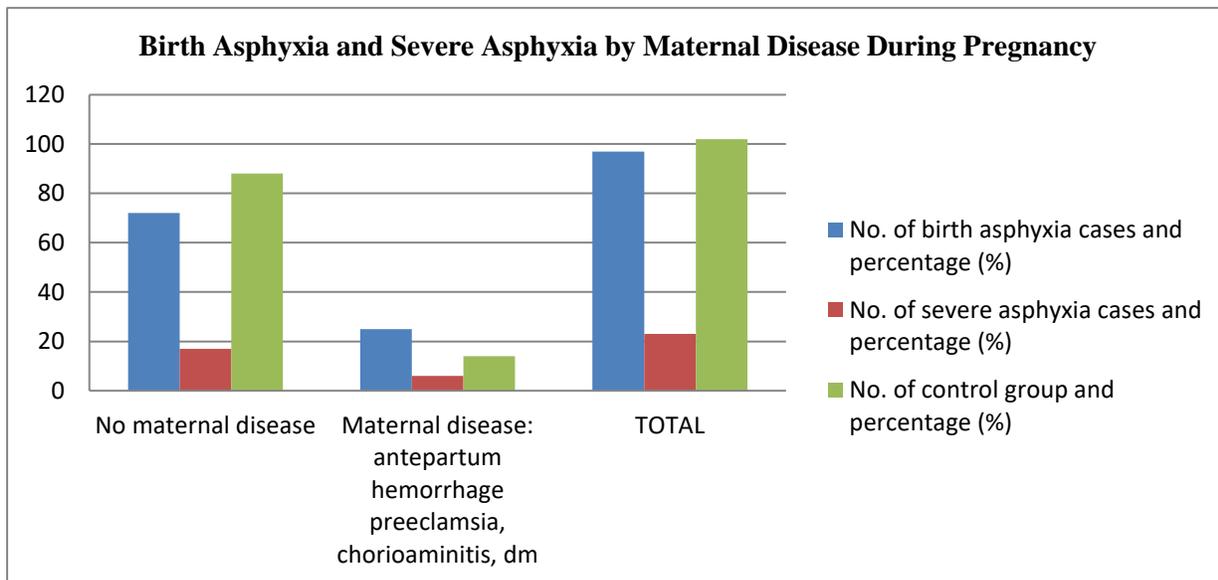


Mode of delivery	No. of neonate asphyxia cases and percentage (%)	No. of severe asphyxia cases and percentage (%)	No. of control group and percentage (%)
Normal vaginal delivery	42.00(43.30)	9.00(39.10)	75.00(73.50)
Emergency cesarean section	32.00(33.00)	9.00(39.10)	7.00(6.90)
Others	23.00(23.70)	5.00(21.80)	20.00(19.6)
TOTAL	97.00(100)	23(100)	102.00(100)



**Table-V: Birth Asphyxia and Severe Asphyxia by Maternal Disease During Pregnancy**

Maternal disease	No. of birth asphyxia cases and percentage (%)	No. of severe asphyxia cases and percentage (%)	No. of control group and percentage (%)
No maternal disease	72.00(74.20)	17.00(73.90)	88.00(86.30)
Maternal disease: antepartum hemorrhage, preeclampsia, chorioamnionitis, dm	25.00(25.80)	6.00(26.10)	14.00(13.70)
TOTAL	97(100)	23(100)	102(100)



**DISCUSSION:**

The aims of this research work to study, the frequency ratio of neonatal asphyxia were 10.1 / 1000 & severe asphyxia were 2.4 / 1000 live born neonate. These ratios are commonly high with respect to those recorded in Goteborg study which done between 1985 & 1991 the frequency of neonate asphyxia in Swedish population [3]. In fact, the neonatal asphyxia frequency may be higher than the obtained figure in our population (10.1 / 1000) because our research study limited only to hospital deliveries [4]. However, the high value shows (10.1 / 1000) that 53.6 percent of women cannot repeated her pregnancy care and there was lag in the seeking hospital care [5], as number of pregnant women admitted to hospital later with midwife obstruction and signs of fetal distress were already present [6]. We need many other important facilities for immediate detection of fetal distress blood spacemen for pH evaluation [7], this research indicated that the birth form asphyxia was (2.3 / 1000) higher as compared to the Swedish research (0.3 / 1000), and they may have occurred due to the high frequency of severe asphyxia and less availability of some factors like less used of ventilators for those who need it [8]. This research also determines the impact of preferred fetal risk factors in the etiology of neonatal asphyxia & the comparative significance of these factors in assessing the risk of asphyxiated neonate to develop severe asphyxia [9]. This research study indicated that there was no numerically important relationship among neonate asphyxia (including severe type) & birth weight [10], in both asphyxiated & control groups the distribution of birth weight was nearly same (table-I) and the result of our research are various from that research which were conducted in a Nigeria [11], which was done under three years duration and presented that neonate with low birth weight (IUGR) plays a critical role in incidence of severe type of asphyxia [12]. from our research it was cleared that there was no serious relation among neonatal asphyxia and gestational age (table-II) [13]. Statistically gestational age was serious risk factor for severe asphyxia (table-II) [14], around 26.1 percent of cases lower than 259 days (37 weeks) when it camper with control group approximately 12 percent [15]. The outcomes of our research are equivalent with results of research conducted at Pittsburgh University whereby around 46.2 percent of cases were lower than 259 days (37 weeks) of gestation [16]. That's way our research

supports the already reported ascending in the frequency of asphyxia with descending gestational age. With respect to consistency [17], there was no huge relationship among neonatal asphyxia (counting extreme sort) and parity of mother (table-III) [18] and these outcomes are like that of Pittsburgh examine [19], yet not the same as that got in an Indian investigation, which demonstrates that prim gravidity carried high hazard for neonatal asphyxia. The outcomes in our investigation might be clarified by a high antenatal and labor care given to prim gravid moms [20]. Concerning method of delivery, this examination demonstrated that a fundamentally higher extents of cases than controls were delivered by crisis C-section, thirty three percent of suffocated patients and thirty nine percent of serious patients (table-IV) in correlation with seven percent of the control groups patient [21], be that as it may, when we consider a segment as a generally safe classification as indicated by essential signs (ceph alo—pelvic disparity, inability to advance, mal-presentation, older primi) and high hazard classification (fetal disease [15], prolapsed line, unexpectedness placenta, IUGR, maternal toxemia, maternal diabetes, prolonged rupture of membrane) we found that just the high hazard class, which spoke to seventy percent of complete cases, delivered by C-section, was related with a critical increment in rate of asphyxia [22]. This demonstrates the segment itself isn't an essential factor in creating asphyxia, and this reality, is progressively refreshing when we realize that all cases (9 cases) of serious asphyxia delivered by C-section have a place with high risk category [5]. This outcome is indistinguishable to Pittsburgh think about outcome [23]. Likewise, this investigation, demonstrated no critical relation among incident of asphyxia and maternal sickness amid pregnancy (Table-V) & these outcomes are not the same as that got in an Indian examination results in which ante partum hemorrhage and pregnancy persuaded hypertension conveyed high hazard for neonatal asphyxia, presumably the quantity of participant plays a role to explain this clarify this conclusion.

**CONCLUSION:**

The frequency of neonatal asphyxia ten per 1000 live birth neonate and sever asphyxia 2.5 per 1000 live born neonate were comparatively high due to lack of routine antenatal care in high percentage of pregnant women (5 3.6%),

postponed looking for a hospital care amid labour and deficiency in accessibility of facilities critical for early recognition of fetal disease fetal blood spacemen for pH estimation. Multivariate diagnosis of high risk factors related with ascending danger of asphyxia demonstrated that prematurity and delivery by C-section were

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