A Cross Sectional Study of Contributing Factors to Birth Asphyxia in Neonates of Allied Hospital Faisalabad

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Abstract –Objective--To determine the contributing factors to birth asphyxia in neonates in Allied Hospital Faisalabad.

Methodology --Cross sectional study was conducted in Allied Hospital Faisalabad, all neonates of term without other physiological abnormalities were included. 50 cases were taken with their mother history of obstetric period and observational data were collected to assess the factors to birth asphyxia. Questionnaire was used as data collection tool. Data were analyzed through SPSS.

Results -- Over-age, maternal diseases In pregnancy, multigravida, abortions, poor conduction method of delivery, home deliveries, mental stress, gestational hypertension and gestational diabetes, low hemoglobin level, low education level and no antenatal visits and short stature and cesarean sections are the contributing factors to birth asphyxia among neonates were traced in Allied Hospital Faisalabad.

Conclusion --Majority of the risk factors associated to maternal history and miss-management of post-partum period, low education level, less awareness about miss- handled cases of birth and poor antenatal care and cesarean sections were the contributing factors of birth asphyxia.

Key words -- perinatal asphyxia, neonatal asphyxia, gestational periods, obstetric, resuscitation

1 Introduction

Neonatal asphyxia is a state of hypoxia in which lack of oxygen leads to ischemic changes in the tissues which creates disturbance in metabolic processes of neonates' body especially disturbing the chemicals that stimulate the brain cells causing damaging of nerve cells; as a result disturb the body functions. Persistent lack of oxygen damages the brain cells and increase the disease rate and death rate of neonates with asphyxia(Kardana 2016).hypoxia damages the whole body organs, but to a great extent damaging is at the hypoxic ischemic encephalopathy, this the major criteria of asphyxiated changes and leads to cerebral damages these changes affect the whole body functions.to assess the treatable, dangerous and non-dangerous form of HIE the recommended cord blood test is done at early level. Normal PH of cord blood is 7.26-7.30. if PH is 7.10 it means neonate is at risk of developing ischemic changes but the range of PH less than 7.2 is treatable form of HIE, and if the PH is less than 7 then it will be dangerous lead to complications and even to death(Joseph, Bindusha et al. 2017).Many ways are used to assess neonatal asphyxia, one in of them is the APGAR score in which best detection of respiratory disorders is point out. In APGAR score a check is made to activity, pulse, grimace, appearance and breathing in minimum 1 mint and maximum 5mints.

2 Literature Review

A study is published in 23 June2015 by Olusegun Joseph Adebami done In Neonatology Unit Pediatric Department and Child Health Technology University of Teaching Hospital Nigeria Southwestern. In this study author explained the cause and effect of oxygen lacking in newborns. He assessed all factors which create this situation of lacking oxygen known as neonatal hypoxia. This hypoxic condition leads to high morbidity and mortality rate in neonates. This is a fatal reality all over the world. He found that poor antenatal care, low socioeconomic status of pregnant ladies, illiteracy, lack of awareness about pregnancy, unavailability of educational programs in local areas to pregnant ladies, and those ladies who are taking guidelines from Dais. These factors are from the mother side. Other factors which also contribute to this condition are the mal-presentation, breech delivery, and cord around the neck, shoulder dystocia, hand prolapse, oligohydramnios and stress conditions of mothers. In article he advocates that if health facilities for deliveries and the up-gradation of socioeconomic status will reduce the morbidity and mortality rate.(Adebami 2015)

An Italian journal of pediatric on birth asphyxia was conducted in june2015- May 2016 in Institute of Health Sciences in Dharan Nepal by Jitandra Thakur-Et-Al and Nisha Keshary Bhatta. It was prospective observational study in neonates with birth asphyxia. In which it was shown that electrolytes play a major role in asphyxia. Asphyxia is an ischemic condition in which tissues are deprived of oxygen and affecting body systems. Sodium, potassium and calcium have a great impact on asphyxia. There is a positive relation between asphyxia and sodium level, and negative relationship between potassium level to asphyxia. Three types of asphyxia are dependent on ranges of these electrolytes like in 1st degree on birth asphyxia Na is 135, in 2nd degree is 130 and in severe is 127. Potassium

level has negative relation so as the potassium levels increase the complexity of asphyxia increase as 1st, 2nd and 3rd has 4,5 and 6 levels of potassium respectively.(Thakur, Bhatta et al. 2018)

An European Journal Of Basic And Clinical Medical Science study was published in 2018 on the impact of birth asphyxia on kidneys in which the author Shireen Adnan Bakhash concluded that kidneys are badly damaged by birth asphyxia. In early neonatal days hypoxic conditions affect kidneys badly. In this situation the creatnine level increased and excretes in urine output. High level of creanine not only damages the kidneys but also affect circulation due to thickness of blood. Kidneys filtration and blood thickness leads to high disease rate ad death rate. It is treatable but its recovery depends upon the stage of birth asphyxia and creatinine level in output. Early diagnosis and well management and intervention can improve this condition and reduce the morbidity and mortality rate in neonates.(Bakhsh 2018)

This study was conducted in Nepal from April 2010 to June 2010 in tertiary care hospital of Nepal. This study was published in 2015. In this study authors named Gurubacharya SM, Rajbhandari S and Gurunng R concluded that there is an association between neonatal asphyxia and meconium aspiration syndrome (MAS). Premature rupture of membranes leads to hypoxia which cause the meconium pass in the mother's uterus and baby inhaled this and develop MAS. This aspiration leads the baby toward apneas and respiratory distress and pulmonary hypertension. Due to these fatal outcomes there produce the need of ambo bagging and even ventilation. Mostly neonates do not recover and get complications more and more. In this way the disease rate and death rate of neonates increase. By taking quick action on the appearance of meconium pass sign, complications can be prevented. Effective identification and proper guidelines upon rupturing of membranes to delivery conductors and pregnant ladies, can reduce the disease and death rates among neonates(Gurubacharya, Rajbhandari et al. 2015).

This article was written by Christian Zammit, Richard Muscat, Gabrielesani and Christophoro Pomara in Malta, published in 2015 in which authors concluded that severe ischemic changes leads to severe brain damaging. In brain there are sensitive astrocytes, white gray matter cells which easily damaged by ischemic conditions of brain tissues, this damaging creates a lot of neuron and axons complications in neonates. These hypoxic conditions arise due to many maternal factors like maternal issues like eclampsia, hypertension, diabetes and infertility. Maternal blood cells issues like extra red blood cells formation, cardiac issues like TOF, bypass and other vavular problems, intestinal problems, narrowing of lumens, poor hydration, risk of shock conditions, catheterizations, advanced disordered infections of mothers like inflammation of meninges, typhoid and many other multiple reasons leads to these ischemic conditions early in neonates soon after birth. Study shows that these complications move towards the neonatal stroke and mortality. As the prevalence of Birth asphyxia increase, neurological disorders increase due to which cognitive problems arise in neonates. Well management and proper and timely diagnose can hold this problem early.(Zammit, Muscat et al. 2015).

3 Methodology

Study Design

Descriptive cross- Sectional study design.

Study Area

ALLIED HOSPITAL FAISALABAD was a site and NEONATAL UNIT NO#1 was setting for this study.

Duration of Study

Study was carried out in 16 weeks (January 2019-april2019)

Data Source

Search engines

- Google scholar
- PubMed
- Books

Then data was collected from the mothers of those neonates whose babies were suffering from the Birth Asphyxia in Allied Hospital Faisalabad.

Study Population

Neonatal unit of Allied Hospital Faisalabad

Sampling Technique

A convenient sample of 50 people has been selected by direct observation for this study, convenient samples are inexpensive, accessible and usually less time consuming. This method is commonly used in health care setting.

Sample Size Calculation:

Sample size of this study was 30.

Sample Recruitment: Inclusion and Exclusion Criteria

Inclusion Criteria

- All newly born babies from first day of life to 28 days of life at term delivered with weight range of 2kg- 3.5kg admitted in NNU.
- Mothers of reproductive age
- Term neonates with diagnosed asphyxia

Exclusion Criteria

- All neonates with cleft lip, cleft plat, spine bifida, low birth weight, IUGR (intra uterine growth restriction), premature babies, IDM (and with other structural abnormalities are excluded from this study.
- Anomalies cases diagnosed during pregnancy scanning

Data Collection Tool

Data collection tool used in this study was a quantitative structured questionnaire distributed to participants. This questionnaire was based on two categories. Demographic questions, questions for knowing the contributing factors. It includes the participant's age, education, occupation, religion, knowledge about antenatal care visits and other relevant factors. After that the answers of questions noted and analyzed.

Present or Pilot Study

Pilot testing was done on 10% of sample size.

Issues of Reliability and Validity:

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform validation involves collecting and analyzing data to assess the accuracy of an instrument. Pilot testing was done to measure the validity of the instrument. The tendency towards consistency found in repeated measurements of the same phenomena is referred to as reliability. Corn Bach's alpha test will be used for assessing the reliability.

Definitions of Key Terms, Concepts and Variables

- **Birth asphyxia**-Birth Asphyxia, defined as a simultaneous occurrence of hypoxic and ischemic insult severe enough to cause metabolic acidosis, neonatal encephalopathy and multiorgan system dysfunction which now manifest with failure of a newborn to initiate and sustain respiration at birth (Aslam et al., 2014; Lincetto, 2007).
- **Amniotic fluid-** Amniotic fluid has an important role in the fetal growth and development. It provides the fetus, with a protective low resistance environment which is suitable for the growth and development. With normal amount of amniotic fluid index ranging from 5 to 24 cms, Amniotic fluid index of <5 cm defines oligohydramnios. (Described by Phelan et al Deepak. A2016)
- **Neonatal encephalopathy-**Neonatal encephalopathy (NE) in term infants following a period of perinatal asphyxia is associated with both perinatal death and neurological injury. (Malcolm Battin 2015).

Variables of interest

Study variables

- Education status
- Experience
- Age
- Time
- Gender
- Nature of amniotic fluid
- Environment
- Induced and spontaneous delivery
- Mode of delivery
- Birth rating
- Resuscitation
- Fetal distress
- Place of delivery
- Marital status
- Ethnicity
- Residence
- Occupational status
- Religion
- Labor attendants
- APGAR scoring based grading
- Duration of labor

Outcome variables

- Contributing factors

Data Analysis Plan

The data collected in this study was tabulated and analyzed by entering in Microsoft SPSS ver. 20 that was used for statistical analysis. Descriptive and inferential statistics were calculated.

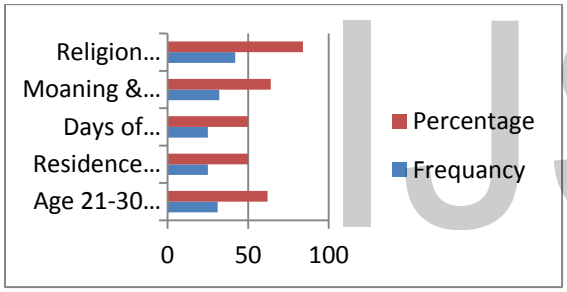
Ethical Consideration

- Informed consent form consists of the following
  - Purpose of study
  - Right to participate
  - Permission to use their given data in research study

4 Results

Table 1: Socio-demographic characteristic of the participants

Table.1shows the demographic data of the participants. 6 (12%) mothers of less than 20 year, 31(62%) mothers are of 21-30 year and 13(26%) mothers of 31-40 year. 25(5%) participants are from locality and 24(48%) participant are from out of city and 1(2%) participants are foreigners. 6(12%) participants have been admitted, 25(50%) for more than 5 days and 18(36%) for less than 5 days. 8(16%) participants came with the complaint of moaning, 8(16%) came with cyanosis, 32(64%) came with moaning and cyanosis and 2(4%) came with other complaints. **Religion:**42(84%) were Muslims and 8(16%) are Christians.



- All participants are cleared about the type and reason of this research study before data collection.
- All participants were briefed about confidentiality of their provided

Variables	Frequency (n)	Percentage (n)%
Residence of the participant		
a. From the locality	25	50
b. Out of city	24	48
c. Foreigner	1	2
Days of admission		
a. 5 days	6	12
b. More than 5 days	25	50
c. Less than 5 days	18	36
d. 4	1	2
Presenting complaint		
a. Moaning	8	16
b. Cyanosis	8	16
c. All	32	64
d. Other	2	4
Religion of the participant		
a. Muslim	42	84
b. Christian	8	16

Table.2 Average results of contributing factors to Birth Asphyxia relevant to obstetric history

Variables	Frequency (n)	Percentage (%)
Disease of mother		
a. Blood pressure before	0	0
b. Diabetes before pregnancy	0	0
c. Blood pressure in pregnancy	13	**26**
d. Diabetes in pregnancy	9	18
e. None	28	56
Number of alive babies before this		
a. Less than 2 babies	16	32
b. More than 2babies	12	24
c. 2 babies	10	20
d. None	12	24

Sex of live babies		
a. Male	9	18
b. Female	14	28
c. Both	17	34
d. None	10	20
Number of abortion		
a. Less than 2	17	**34**
b. More than 2	1	2
c. None	32	64
Hemoglobin level during pregnancy		
a. Less than 10mg/dl	22	**44**
b. More than 10mg/dl	17	34
c. 10mg/d	11	22
Blood pressure during pregnancy		
a. Less than 90/50mmHg	15	30
b. More than90/50mmH	17	34
c. 90/50mmHg	18	36
Educational level of father	21	**42**
a. None	12	24
b. Primary	8	16
c. Middle	8	16
d. Metric	1	2
e. Intermediate	0	
f. Graduation	0	
g. Masters		
Height of mother		
a. 5 feet	4	8
b. Less than 5 feet	32	**64**
More than 5 feet	14	28
Mental stress during pregnancy		
a. Yes	1	2
b. No	25	50
c. To some extent	24	**48**
Type of family		
a. Nuclear family	8	16
b. Joint family	42	**84**
Size of family		
a. Less than 4 members	6	12
b. More than 4 members	43	86
c. 4 members	1	2
Type of labor		
a. Normal	10	**20**
b. Obstructed	5	**10**
c. Prolonged	13	**26**
d. Membranes ruptured	22	**44**
e. Other	0	
Number of pregnancy		
a. 1st pregnancy	10	20
b. 2nd	14	28
c. 3rd	5	10
d. Multi	21	**42**
Number of dead babies before this		
a. Less than 2	14	28
b. More than 2	0	
c. None	36	72
Birth spacing in last and present pregnancy		
a. One year	32	**64**
b. Two year	14	28
c. Three year	2	4
d. More than three	8	16
e. None	4	8
Antenatal visits		
a. One monthly	25	50
b. Two monthly	7	14
c. Three monthly	8	16
d. None	10	**20**
Educational level of mother		
a. None	10	20
b. Primary	11	22
c. Middle	10	20
d. Metric	14	28
e. Intermediate	0	
f. Graduation	5	10
g. Masters	0	

Table.2 shows the contributing factors to Birth Asphyxia which are related to obstetric history of mothers. 13(26%) participants with diabetes mellitus, 9(18%) and 28(56%) participants were without any disease like hypertension and diabetes. 17(34%) participant were with the history of less than 2 abortion and 1(2%) with the more than 2 abortion. 14(28%) participants have lost less than 2 babies. 22(44%) participants were with the less birth spacing between past and present birth of one year, 14(28%) of two years, 2(4%) with three year and 8(16%) participants with more than 3 years of gap. 25 (50%) were with one monthly antenatal visits and 7(14%) with two monthly, 8(16%) with more than three months and 10(20%) were with no antenatal visits. 10(20%) participant with no education and 35(70%) with under metric. 32(64%) mothers

with less than 5 feet of height. 33(66%) with low hemoglobin level in pregnancy. 15(30%) with low blood pressure in pregnancy. 24(48%) participants with stress during pregnancy. 5(10%) were with obstructed labor, 13(26%) with prolonged labor and 22(44%) with ruptured membranes. 21(42%) were with multiple pregnancy. 14(28%) were handled by traditional birth attendants. 24(48%) were delivered through long segment caesarian section.

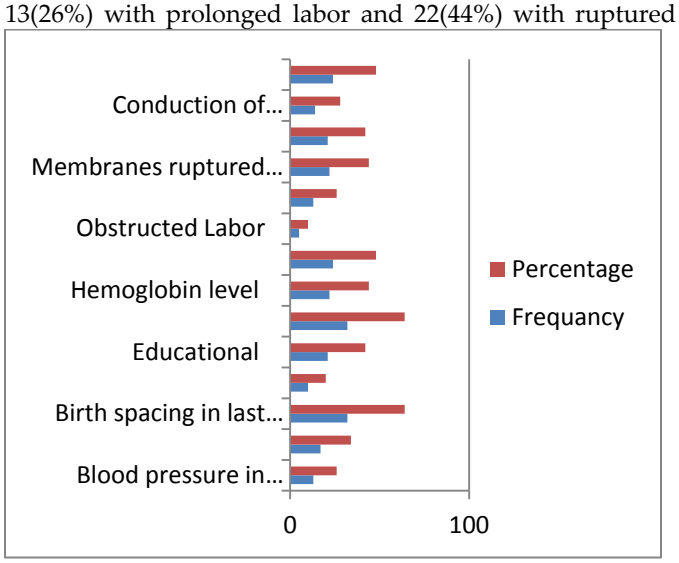
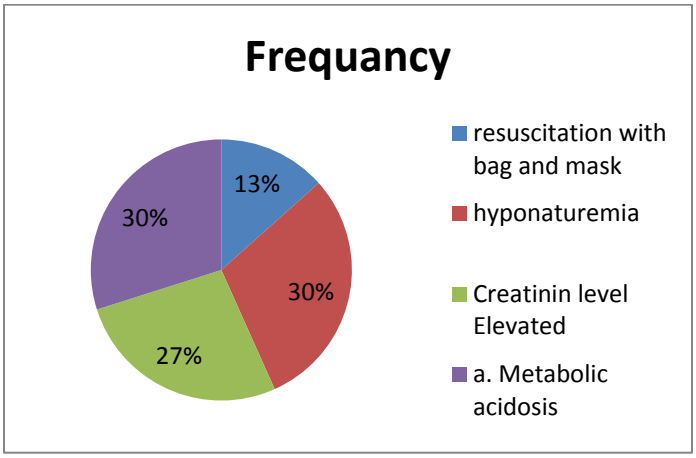


Table 3. Average results of observational data related to Birth Asphyxia in neonates

Variables	Frequency (n)	Percentage (%)
method of resuscitation		
a. bag and mask resuscitation	13	**26**
b. bag and mask resuscitation with pressure ventilation	9	18
c. bag mask and chest compression with positive pressure ventilation	3	6
d. None	25	50
Hypoxic ischemic encephalopathy staging		
a. Mild	8	16
b. Moderate	28	**56**
c. Severe	14	28
Clinical profile		
a. Inotropic support	14	28
b. Respiratory support	31	62
c. Both	2	4
d. Anti-seizures	2	4
Electrolytes report		
a. Hyperkalemia with hyponatremia	29	**58**
b. Hypernatremia with hypokalemia	19	38
c. Hypocalcaemia	2	2
Creatinine level		
a. Normal range(0.4-1.2)	23	46
b. Elevated level	26	**52**
c. Low level	1	2
Arterial blood gases		
a. Metabolic acidosis	29	**58**
b. Metabolic alkalosis	3	6
c. Respiratory acidosis	3	6
d. Respiratory alkalosis	14	28
e. Normal	1	2
APGAR scoring		
a. 5	0	
b. 4	28	56
c. 3	19	38
d. 2	3	6
e. 1	0	
f. 0	0	

Table.3shows the observational data of neonates admitted in nursery with the diagnose of Birth Asphyxia. 13(26%) babies were resuscitated with poor management of bag and mask. 29(58%) neonates were with low sodium level which were assessed by reports and clinical signs. 26(52%) neonates with high level of creatinine. 49(98%) neonates with disturbed ABGS, 29(58%) neonates were with metabolic acidosis and 14(28%) respiratory alkalosis.



5 Discussion

Birth asphyxia is a medical term in which oxygen deprivation to brain cells occurs during birth process leads to physical harms. There are many contributing factors to birth asphyxia, in which unawareness, lack of education, miss- handling, miss- management of medical and paramedical staff, low antenatal visits, multiple pregnancy, low hemoglobin level during pregnancy, gestational diabetes, gestational hypertension, mental stress during pregnancy, obstructed labor, prolong labor, ruptured membranes, traditional birth attendants and cesarean section. Many investigations are done to diagnose and to know the extent of brain cells damage, but the most effective one is MRI. First essential step to take is oxygen supply in birth asphyxia. This study was done in Allied Hospital Faisalabad to trace out the cause of so much high rate of birth asphyxia. This study has shown many contributing factors, in which the most important one are known through a well- managed way. This study revealed that 8(16%) cases of mild stage of birth asphyxia and 28(56%) moderate and 8(16%) are of severe stage cases. Another study was conducted in northern Tanzania in 2017, which revealed that 10% cases of stage one birth asphyxia, 68% were of second stage and 22% were of third stage birth asphyxia(Simiyu, Mchaile et al. 2017).

In present study 35% neonates were delivered by vaginal delivery and 65% babies were delivered by cesarean section. These data was collected from mothers of neonates. They were asked the multiple questions to find out the factors of birth asphyxia. This study showed that operational deliveries lead to more cases of birth asphyxia as compare to vaginal deliveries. Many happenings would be happened during deliveries, like miss- handling and miss- management of delivery cases. A study was conducted in Oromia region, southern Euthopia by Debero Mere,T. et al in which it is briefed that 82.6% were delivered through cesarean section and 17.4% delivered vaginally. The reasons of operational deliveries were footling breech presentation26%, unsuccessful progress to vaginal delivery was 11%, elective cesarean section 22% fetal slow movement 18% and 8% with short pelvis, 8% cord compression and 18% ruptured membranes(Debero Mere, Beyene Handiso et al. 2017).

In this study 20% deliveries were normal, 10% were obstructed, 26% prolonged, 44% membranes ruptured. All these factors are the main causes of birth asphyxia. During obstruction fetus has to face many distress, during prolonged labor mothers have become exhausted and glucose level decrease and catabolic changes occur and due to exertion mothers respiration increases and shallow breathing leads to acidosis and baby has to suffer from hypoxic changes and ruptured membranes are the major cause of liquor inhalation and meconium pass and baby went in apnea. In other study which was done in Enugu South East by Ekwochi, Asinobi et al in 2017 in which the author explained the some causes of birth asphyxia and briefed the percentages of those causes like, PROM, Obstructed labor and pronged labor. Stages of asphyxia were also explained, like 7.1% of mild stage, 6.7% of moderate stage and 83.3% of severe stage of hypoxic ischemic encephalopathy, while in present study stages were 16%, 56%, and 28% respectively(Ekwochi, Asinobi et al. 2017).

Present study shows that there is a more complications in stage three than two and one. First stage settles within 24 hours without leaving major effects on brain and body, while 2nd stage takes about 5-7 days with 50% risk of major complications even to death but in rare cases. 3rd stage has 25% recovery chance but with handicapped physical changes almost in all cases. All survival cases have abnormalities in next life, and mostly expire. Asphyxiated children shows slow reflexes as compared to normal children, but it also depends upon stages. Another study which was done in Australia and News eland in gynecology and obstetrics department by saddler and Masson in 2019, in which it was explained that uncomplicated labor reduce the birth asphyxia stages two and three. According to that study 67% 2nd stages dangerous and 33% was the 3rd stage is dangerous(Sadler, Masson et al. 2019).

In present study it was shown that gestational hypertension and gestational diabetes leads to high risk pregnancy. According to collected data 28% gestational hypertension and 20% GDM, 52% stress were the causes of birth asphyxia. In another study which was conducted in 2018 by Malmqvist, o et al, in which author explained the high risk pregnancies, like GDM, gestational hypertension. Thyroiditis, assisted fertilization and psychiatric disorders, 22%, 23%, 7%, 40% and 8% respectively(Malmqvist, Ohlin et al. 2018).

In present study there is ha 34% abortions contributed to birth asphyxia, in of them most of the lady with missed abortion. These abortions may leads to complications; in one of them is birth asphyxia. Retained particles of placenta and other pieces may contribute to these factors. Habitual abortions may not provide proper internal environments to fetus due to which it leaves hypoxic impacts on babies and most of the babies suffer from birth asphyxia. In another study which was done in 2017 by Adul Aziz and Abdul Azeem , it was noted that birth asphyxiated neonates mostly got it due to multiple aborted mothers, 50% aborted mothers carry this disease in their neonates, they remained unable to provide proper

uterine environment to fetus(AbdelAziz, AbdelAzeem et al. 2017).

APGAR score shows abnormal range in birth asphyxia, in this scoring appearance, pulse, grimace, heart rate and breathing is checked from 1-10 mints by grading 1,2,3,4,5 and 0. In this study no one case was within normal rage, 56% with 4 grading and 38% with grade 3, which shows reflexes are affected by birth asphyxia. In another study which was conducted by Ensing Sabine in 2015, it shows that APGAR scoring is a best scale to note the refluxes of neonates. Upon the base of these reflexes we can note the normality and abnormality of neonates(Ensing 2015).

Operative deliveries are major factors to birth asphyxia, during those procedures miss-management and miss-handled cases mostly suffer from these sufferings like birth asphyxia. Untrained persons and local attendants case these factors which lead to birth asphyxia. In these study 48% pregnant ladies are delivered by cesarean sections whose babies suffer from this case of birth asphyxia. In another study which was done by Teixeira Gracim cost et al in 2016 in Fedral university Jennairia , this study showed the risk factors of mortality in neonates, among them many factors were discussed , one of them is birth asphyxia, which was caused by many maternal factors like aged mothers, twin pregnancy and cesarean sections. In that study the percentage of cesarean sections was 42%(Teixeira, Costa et al. 2016).

In this study it was also seen that most of the asphyxiated babies have to resuscitated to rehabilitate, some neonates recover after common ambo bagging, some have to require ambo bagging with chest compressions and some have to need ambo bagging with chest compressions and positive ventilation pressure 52%, 36% and 12% respectively. In another study which was conducted in 2018 by Ersdal et al, it was shown that most of the cases were reverted by resuscitation. Proper ambo bagging of asphyxiated neonates after birth may alleviate the complications of hypoxia. Many neurological damages were avoided by applying this practice. By assessing the general conditions attendants should know the exact method of ventilation like which one in requirement of just ambo bagging, of which one is in need of chest compression and which one would be resuscitated by ambo bagging, chest compressions and positive ventilation pressure(Ersdal, Eilevstjønn et al. 2018).

In this study it was also shown that asphyxiated babies' leads to sepsis and kidney damaging. Due to hypoxia many tissues are damaged and fail to survive to a normal extent, kidney fails to filter properly, many time urea and creatinine level increase and baby has to suffer ,any complications like urea loaded in blood, filtration poor, glomerulus damaging and protein appear in urine and blood and creatinine also appear. In present study 52% asphyxiated suffer from high level of creatinine in blood and protein in urine. In another study which was conducted by Dexin Reis et al in 2015, in that study it was explained that RFTs had been disturbed in hypoxic babies because hypoxic changes leads to immature functions of cells. In that study 40% neonates suffer from this condition, but its level also depended upon the asphyxia grade one two and three(Dixon, Reis et al. 2015).

In present study it was shown that asphyxiated babies suffer from under development, cells remained deprived with proper oxygen and fail to grow and develop and babies mostly suffer from cerebral palsy. In another study which was done in India by sarkar Patra et al, it has been shown that nothing got proper flourish without getting proper oxygen supply, in hypoxic conditions cell would not convert to tissues and tissues into proper functional organ, so in this way complications arises and babies called C.P child. Their functions affected and effect depends upon stage of hypoxic ischemic encephalopathy, as the stage is up, risk factors also increase(Sarkar, Patra et al. 2013).

6 Conclusion

"A cross sectional study of contributing factors to birth asphyxia among neonates in Allied Hospital Faisalabad". Birth asphyxia is a medical condition in which lack of oxygen deprives the many body organs like heart, kidney, gut, liver, lungs and mostly affect brain cells and damaging occur in it. It mostly happen during intra -partum and post-partum and rarely in antepartum due too maternal medical disorders. All asphyxiated changes of organs are acceptable than brain cells damaging, it leaves last long effects like developmental delay, poor growth, mentally retarded and mostly physically disability such as cerebral palsy. Birth asphyxia is also known as perinatal asphyxia and neonatal asphyxia. Its abroad term, its concise form is hypoxic ischemic encephalopathy, upon based hypoxic changes its grading is grade I, grade II and grade III.

Cross sectional descriptive study design was used in the neonatal department of Allied Hospital Faisalabad. Questionnaire is the data collection tool. Convenient sampling method was used to collect sample of 50 participants to trace out contributing factors to birth asphyxia by considering a special inclusion and exclusion area. Age, maternal diseases In pregnancy, multigravida, abortions, poor conduction method of delivery, home deliveries, mental stress, gestational hypertension,

gestational diabetes, low hemoglobin level, low education level and no antenatal visits and short stature and cesarean sections are the contributing factors to birth asphyxia among neonates were traced in Allied Hospital Faisalabad.

7 Recommendations

Age -- Pregnancy in proper age should be there, because complications increase as the age of ladies increase.

Multiple pregnancies -- Multigravida with less birth spacing/gap between children should be avoided.

Birth spacing -- Females should be counseled about proper birth spacing among children can reduce the birth complications in neonates and also in females.

Trained birth attendants -- Conduction of deliveries should be conducted by trained and qualified persons. Educate the pregnant ladies about the complications which could be created due to conduction of deliveries by untrained and non-qualified persons.

Hospital delivery -- Deliveries should be conducted in proper set-up of medicine and instruments with trained and qualified persons.

Stress Free Environment -- Pregnant ladies should live in stress free environment; mentally relaxation must be there with pregnant ladies.

Multivitamins -- Multivitamins should be recommended to avoid from anemia, neural tube defect and other weaknesses and complications.

Psychotherapy for Normal Deliveries -- Pregnant ladies should be encouraged for normal trial those are afraid of vaginal delivery, because cesarean sections leads to birth asphyxia to some extent.

Health Education -- Education about health among pregnant ladies should be common by conducting meetings in obstetric OPD and at door step through health visitors.

Antenatal visits -- Awareness should be created among pregnant ladies that how much important the antenatal visits to avoid from anomalies and other complications.

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