



Original Article

Clinical Profile of Birth Asphyxia in Rajshahi Medical College Hospital

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Abstract

Birth asphyxia is an important cause of preventable cerebral injury in the neonatal period. It continues to be major cause of neonatal mortality and morbidity in both developing and developed countries. Recently a quite good number of birth asphyxiated new born babies had been admitted in the pediatric department of RMCH (Rajshahi Medical college Hospital). This study has been conducted to see the types and outcome of management of birth asphyxiated babies. A total 871 neonates were admitted in the pediatric department of RMCH from September 2001 to November 2002. Out of which birth asphyxia was 191 (21.92%) acute respiratory infection (ARI)-194 (22.73%), Low birth weight (LBW)-113 (12.97%), Neonatal jaundice-84 (9.64%), Septicaemia-38 (4.38%), Meningitis-26 (2.98%), Diarrhea-24 (2.75%), Birth trauma-24 (2.75%), Neonatal tetanus-04 (0.45%), Out of the total birth asphyxiated babies, mild type was 35 (18.32%), moderate type was 40 (20.94%), and severe birth asphyxia was 116 (60%), The recovery rate in mild birth asphyxia was (100%), in moderate case was (95%) and in severe case the rate was (74.13%).

TAJ 2005; 18(2): 106-108

Introduction

Birth asphyxia is the most common and important cause of preventable cerebral injury occurring in the neonatal period¹. Though there is no clinically accepted definition of birth asphyxia¹, yet it may be defined as the failure on the part of a newborn infant to establish spontaneous respiration immediately following complete delivery².

Birth asphyxia remained on the top of the list in the South Indian population³. It continues to be a major causes of neonatal mortality in both developing and developed countries^{4,7}. But the

incidence of birth asphyxia however is much higher in developing countries^{4,7}. It is true that there is very little information on the incidence and prevalence of birth asphyxia in this country.

Many pathological, biochemical and metabolic changes occur as a result of birth asphyxia. Subsequent effects of it affects many organ systems like central nervous system, cardiovascular system, pulmonary, renal, adrenal, gastrointestinal tract, skin and haemopoietic gysto. Among them cerebral complications are the most devastating, as full recovery may not occur¹ and child may develop neurological

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sequelae like cerebral palsy, mental retardation and cranial nerve palsies. Birth asphyxia is classified depending upon the APGAR scoring done by the obstetricians and pediatricians in delivery room firstly at one minute and then at fifth minute after delivery. APGAR score >7 at 1 minute is labeled as mild birth asphyxia, APGAR score 4-6 as moderate and score 3 or <3 as severe birth asphyxia.

Recently large number of new born babies with birth asphyxia were admitted in the pediatric department of Rajshahi Medical College Hospital (RMCH), referred from different clinics, upazila health complex and Dept. of gynae and a obstetrics of Rajshahi Medical College Hospital. After treatment some of them improved with subsequent complications and some died due to cardio respiratory failure.

In this background, we decided to do a study on birth asphyxiated babies in the Department of pediatric, Rajshahi Medical College Hospital (RMCH).

The objectives of the study were to see:

- (1) Types of birth asphyxia and
- (2) Outcome of management of birth asphyxia.

Material and Methods

This study was conducted during the period of September 2001 to November 2002. A total 871 number of neonates were admitted in the dept. of pediatric of RMCH during this period. Out of which 191 were with Birth asphyxia. Some of them had history of birth trauma, convulsion and low birth weight as well as well birth asphyxia.

All of the birth asphyxiated babies were observed for hypothermia, cyanosis, convulsion, apneic spells and any birth injuries, primitive reflexes like moro, rooting, grasp & suckling reflexes were also examined.

In most of the cases, diagnosis was done on the basis of history and physical examination. APGAR scoring was done in some cases. Following investigations were done e.g. CPE Hb%, TC-DC, Platelet count, blood sugar serum electrolytes, X-ray chest, ultra sonogram of brain etc.

The babies were managed with oxygen (with umbilical bag and face mask) iv fluid, glucose, Sodium bicarbonate, steroid, prophylactic antibiotic and anticonvulsant in relevant cases.

Result

During our study period from September to November 2002, a total 871 neonates were admitted in our pediatric dept. Out of which Birth asphyxia was 191 (21.92%), ARI-194 (22.73%), LBW-113 (12.97%), Neonatal jaundice-84 (9.64%), Septicaemia-38 (4.36%) Meningitis-26 (2.98%), Diarrhoea-24 (2.75%), Birth trauma-24 (2.75%), Neonatal tetanus-04 (0.45%), (Table-1).

There were total 191 birth asphyxiated patients in our study, Out of them mild birth asphyxia was 35 (18.32%) in number, moderately asphyxiated were 40 (20.94%) and severely birth asphyxiated were 116 (60%) in Number (Table-2). The recovery rate in mild asphyxia was 35 (100%), in moderate cases, 38 (92%) and in severe cases 86 (74.13%), (Table-3).

Table 1: Disease profile of Neonates (N-871)

Nature of Disease	Number	Percentage
ARI	197	22.6%
LBW	113	22.27%
Birth asphyxia	191	21.9%
Neonatal Jaundice	84	12.97%
Septicemia	38	4.36%
Meningitis	26	9.64%
Diarrhoea	24	2.98%
Birth Trauma	24	2.75%
Neonatal Tetanus	04	0.45%
Total	871	100%

Table 2 : Type of birth asphyxia (Total no. 191)

Types	Number of Death	Percentage (%)
Mild	35	100.00
Moderate	40	20.94
Severe	116	60.00

Table 3: Outcome of treatment of Birth Asphyxia

	Mild (35)	Moderate (40)	Severe (116)
Recovery	35 (100%)	38 (95%)	86 (74.13%)
Death	00 (00%)	02 (5%)	30 (25.87%)

Discussion

The increased rate of neonatal death due to various causes is a matter of great concern among all health professional in Bangladesh. Neonatal mortality rate has fallen from 78% to 48% during last 20 years, but the rate is still unacceptably high^{9,10}.

Mechanical ventilation in neonates has revolutionized the outcome of sick new born and it is the single most important advancement in neonatal medicine, which has reduced neonatal mortality¹¹. In our series we found birth asphyxia as an independent risk factor for neonatal mortality and we have no facility for mechanical ventilation except umbilical catheter. Comparable observations were made by Mulligan and Chowdhury who found mortality of 44% and 40% respectively in cases of perinatal asphyxia^{12,13}.

A recent hospital based study by Adamson showed 15% mortality among severe perinatal asphyxia cases¹⁴. Another study by Kumari reported a significant decline in neonatal mortality with asphyxia from 46% to 28.40% during 1981-1988 respectively⁴. In our study we have found that death rates in severe birth asphyxia was 25.87% which was nearly similar to the study conducted by Mulligan and Chowdhury.

Conclusion

There are trained pediatricians in our pediatric department, but there are no trained pediatric nurses and no intensive care unit for neonates in the RMCH. If we enhance our facilities for neonatal care including well-equipped ICU & trained pediatric nurses, the death due to asphyxia could be reduced more. Besides this, prenatal mortality and morbidity among the hospitalized cases could be reduced by effective intervention among high-risk pregnancies. Appropriate intrauterine monitoring and safe delivery of the babies are important for this. Advanced life support parenteral alimentation can improve the outcome of the birth asphyxiated babies in this hospital.

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