

Original Article

Impact of Antenatal Care (ANC) on Perinatal Asphyxia.

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Abstract:

Antenatal care (ANC) is very important for all women for their own health and their neonates. This study was done to observe the impact of antenatal care on perinatal asphyxia. This case-control study was conducted at Neonatology Department of Dhaka Medical College Hospital, Dhaka from July 2014 to December 2014. Fifty neonates with perinatal asphyxia (Group I) and fifty neonates without perinatal asphyxia (Group II) were selected as study subjects. After selection, informed written consent was taken. Then data were collected by face to face interview of the mother. The mean age of neonates was 49.0±72.1 hours in group I and 55.8±63.9 hours in group II. Majority (80.0%) of the neonates had birth weight 2.5- 4.0 kg in group I and only 22(44.0%) neonates had birth weight 2.5-4.0 kg in group II. Almost half (48.7%) of the mothers received antenatal check-up at UHC/FWC/MCWC in group I and 20(41.7%) in group II. It was observed that 19(38.0%) mothers received antenatal care from untrained Dai in group I and 42(84.0%) in group II. Only 30.0% of the mothers received adequate antenatal check-up in group I and 68.0% in group II. Mothers having baby with perinatal asphyxia received significantly less number of ANC.

Key words: Perinatal asphyxia, ANC.

Introduction:

A common neonatal problem is perinatal asphyxia and it causes neonatal morbidity and mortality. Perinatal asphyxia is the fifth largest cause of under-five child death. It also accounts for a long term neurological disability and impairment. The complication of perinatal asphyxia causes 23% of neonatal death¹. Ninety nine per cent of neonatal deaths take place in developing countries². In developing countries, the deliveries usually occur at home and untrained dai usually attends those. It occurs when a baby does not receive enough oxygen before, during or after birth. Complications during delivery are also responsible for perinatal asphyxia. Intrapartum causes of perinatal asphyxia are also reduced by identifying the high risk pregnancies during antenatal visit. Most of the risk factor of asphyxia is maternal in origin³. So adequate

antenatal care is needed to diagnose and to give appropriate management of this risk factors and thereby to reduce perinatal asphyxia.

Antenatal care is very important for better perinatal outcome⁴. It is very important for all pregnant women for their own health and their neonates⁵. By recognizing the risk of the pregnancy, antenatal care can help to manage the problem early. Adequate antenatal care means visiting at least 4 times to an antenatal care centre, to a medical doctor or a hospital for antenatal check-up. Inadequate antenatal care means <4 visits. Adequate antenatal care reduces rates of preterm labour, LBW, perinatal asphyxia and perinatal death. Adequate antenatal care gives an opportunity to give advice for hospitalization, selection of place of delivery and time of delivery and thereby reduce maternal and neonatal complications.

Materials and Methods:

This case-control study was conducted at Neonatology Department of Dhaka Medical College Hospital, Dhaka over a period of six months from July 2014 to December 2014. Fifty neonates with perinatal asphyxia and fifty neonates without perinatal asphyxia were selected as study subjects. Subjects with congenital malformation were excluded from this study. After selection informed written consent was taken from the legally authorized representative. Then data were

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collected by face to face interview of the mothers. Information regarding demography, antenatal care, complications during antenatal period and natal history were collected. Continuous data were analysed by unpaired t test and categorical data were analysed by Chi-square test. Level of significance was considered <0.05.

Results:

Mean age of the neonates was 49.0±72.1 hours in group I and 55±63.9 hours in group II. There was no statistical significant difference between two groups. It was observed that only 20.0% of the neonates had low birth weight in group I and 28 (56.0%) in group II. The mean birth weight was found significantly high in group I (2.7±0.3 kg) than that of group II (2.4±0.8 kg) (Table I). Almost half (48.7%) of the mothers received antenatal check-up at UHC/FWC/MCWC in group I and 20(41.7%) in group II. Fourteen (35.9%) mothers received ANC in private clinic or doctors chamber in group I and 20.8% mothers in group II (Table II).

It was observed that in group I, majority 19(38.0%) of the deliveries were attended by untrained Dai and 42(84.0%) in group II (Table III). Adequate antenatal check-up was taken significantly higher times by group II (68.0%) than that of group I (30.0%) (Table IV).

Table I: Distribution of subjects according to age in both groups (n=100)

	Group		p-value
	Group-I (n=50)	Group-II (n=50)	
Age of mother (years)	23.0±5.5	25.7±5.3	
Age of neonate(hours)	49.0±72.1	55.8±63.9	0.618 ^{ns}
Mean±SD			
Gender			
Male	31 (62.0)	29 (58.0)	0.680
Female	19 (38.0)	21 (42.0)	
Birth weight (kg)			
<2.5	10 (20.0)	28 (56.0)	
2.5 – 4.0	40 (80.0)	22 (44.0)	
Mean ± SD	2.7 ± 0.3	2.4 ± 0.8	0.014

Table II: Distribution of the study patients by place of taking ANC (n=87)

Place of ANC received	Group	
	Group-I (n=39)	Group-II (n=48)
Medical College Hospital	0 (0.0)	4 (8.3)
Private Clinic/Doctor	14 (35.9)	10 (20.8)
UHC/FWC/MCWC	19 (48.7)	20 (41.7)
Sadar Hospital	0 (0.0)	4 (8.3)
Other	6 (15.4)	10 (20.8)

Table III: Distribution of the study patients by birth attendant (n=100)

Birth attendant	Group		
	Group-I (n=50)	Group-II (n=50)	
Doctor	6 (12.0)	0 (0.0)	0.001
Nurse	11 (22.0)	4 (8.0)	
Trained Dai	14 (28.0)	4 (8.0)	
Untrained Dai	19 (38.0)	42 (84.0)	

Table IV: Distribution of the study patients by quantity of antenatal care (n=100)

	Group		
	Group-I (n=50)	Group-II (n=50)	
No ANC check up	11 (22.0)	2 (4.0)	0.001
Inadequate (<4 times)	24 (48.0)	14 (28.0)	
Adequate (≥ 4 times)	15 (30.0)	34 (68.0)	

Discussion:

In this study, mean age of the neonates was 49.0±72.1 hours in group I and 55±63.9 hours in group II. Shireen et al⁶ showed mean age 2.6 days in control group whereas 13.8 hours in perinatal asphyxia group. Mean age of the perinatal asphyxia group was less because they needed earlier admission for resuscitation. Male to female ratio was 1.63:1 in perinatal asphyxia group which was consistent with other studies⁷⁻¹⁰.

In this current study it was observed that majority (80.0%) babies had birth weight in between 2.5-4.0 kg in group I and 22 (44.0%) babies in group II had similar birth weight. The mean birth weight was found 2.7±0.3 kg in group I and 2.4±0.8 kg in group II. Mean birth weight was 2.78±0.2 kg and 2.82±0.2 kg in study and control group respectively in the study of Islam et al¹¹.

Almost half (48.7%) of the mothers received antenatal check-up at UHC/FWC/MCWC in group I and 20(41.7%) in group II. Fourteen mothers received ANC in private clinic or doctors chamber in group I and 20.8% mothers in group II. Tuladhar mentioned in their study that 71.6% of the participant attended ANC at hospital and 20.4% at clinic¹². Doctors used to provide antenatal care all over the world except sub-Saharan Africa¹³.

In this current study it was observed that in group I majority 19(38.0%) deliveries were attended by untrained Dai and 42(84.0%) in group II. Doctor attended 12.0% in group I and not found in group II. Nurses attended 22.0% and 8.0% in group I and group II respectively. Trained Dai was found significantly high in group I (28.0%) whereas it is 8% in group II. Tuladhar observed 71.6% participants were attended at hospital by doctor and 20.4% at clinic¹².

In this series it was observed that only 30.0% of the mothers received adequate antenatal check-up in group I and 68.0% in group II. Inadequate antenatal check-up was significantly ($p < 0.05$) higher in group I. Tuladhar found that only 6.5% women did not attend ANC. Overall, 93.5% of the women attended at least one ANC¹². This reflect the low awareness for antenatal check-up in our society⁶. Birth asphyxia was found more prevalent in the unbooked cases¹⁴.

Conclusion:

Women who received ANC visit by a skilled provider were less likely to experience perinatal asphyxia. Thus, to accelerate progress towards the reduction of perinatal asphyxia, all pregnant women should receive ANC by skilled provider.

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