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Original Research Article

Maternal Antenatal Profile in Low Birth Weight (LBW) Babies

Jyoti Bala Jain[1*], Ujjwala Jain[1**], Deepandra Garg[2*@], Usha Rani Sharma[3***], Neha Agrawal[4#]

[*]Assistant Professor, [**]Senior Resident, [***]Professor & Head, [#]Resident
[1]Department of Obstetrics & Gynecology, Pacific Medical College and Hospital, Udaipur (Rajasthan).
[2]Department of pediatrics, Geetanjali Medical College and Hospital, Udaipur (Rajasthan) - 313001.
[3]Department of Obstetrics & Gynecology, Panna Dhai Zanana Hospital, R.N.T. Medical College, Udaipur.
[4]Department of Radiology, J.L.N Medical College and Hospital, Ajmer (Rajasthan).

[@]Correspondence Email: deepandragarg17@yahoo.com

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ABSTRACT

Objective: This study was aimed to evaluate the causative maternal antenatal factors of low birth weight babies and to suggest necessary recommendations to decrease incidence of low birth weight babies and to improve their survival.
Material and Methods: 500 mothers with documented pre term labor and their babies weighing less than 2.5 kg were included in this study and all maternal risk factor were evaluated which may cause low birth babies.
Results: Out of 500 mother 68% were not registered to ANC clinic. Maximum mothers were from rural class i.e. 66.6%. 41% of mothers were from teenage group. 58.8% mothers were illiterate. Maximum mothers belonged to lower socio-economic status i.e. 56.8% and Muslim class i.e. 57.80%. Majority of mothers were Multipara i.e. 72.6%.
Conclusion: A number of maternal antenatal factors like ANC status, Age, Height, Weight, Religion, High-Risk pregnancy contributes to pre term birth as evident from the above study. Today's health system requires more information about Maternal antenatal factors, more antenatal interference for proper management of high risk mothers and advancement in perinatal and neonatal expertise, provision of good neonatal ICU facilities to ensure intact new born survival.

Keywords: Maternal antenatal factors, Low Birth Weight, pre term labor.

INTRODUCTION

Everything ought to be done to ensure that an infant be born at term, well developed, and in healthy condition. But in spite of every care infants are born prematurely.
-Pierre Buden, The nursling

Could an infant endowment be any richer than to be born at term after a planned pregnancy, and grow and develop into healthy, socially responsible adult?

Some children are so blessed. Unfortunately however there are many who do not any many that live in dire need of the

basic necessities for reasonable physical and mental growth.

On a global basis the world's most serious problem is infant born as low birth weight and they experience the world's highest mortality and morbidity rates. [1] Low birth weight are not limited to the underprivileged countries, so called developing or third world countries but they do occur with the greatest frequencies in them and are rampant among the poorest portion of the population. But it must be recognized that they also occur in the so-called developed (as unfortunate term) countries and especially so among the very poorest of their population groups. [2]

The birth weight is universally and in all population groups the single most important determinant of the chances of the newborn to survive and experience healthy growth and development. [3] There is no indication in human biology which will tell us as much about the future trajectory of life as the weight of an infant at birth. The birth weight is significantly affected by the socio demographic factors like age of mother, economic condition of family, maternal education, various rituals, Maternal anthropometrical criteria like pre pregnancy, weight, height, nutrition physical illness malaria, T.B., bronchial asthma, UTI, diabetes, CHD, anemia, TORCH, infection, obstetric complication, like APH, PET, Maternal drug abuse, smoking, alcoholism, environmental pollution. [4]

Over 70% of pranatal death occurs among low birth weight. [5] These outcomes are not unexplained as birth asphyxia; trauma, infections, hypothermia and hypoglycemia, hyaline membrane disease, hyper bilirubinemia and malformations are remarkably more common among low birth weight and long-term sequel like neurological disabilities. Diabetes mellitus, coronary artery disease, obesity in later life. [6]

Hence low birth weight is one of the major clinical factors of adverse outcome of life and leads to significant direct and indirect cost that have to be borne by parents and society.

Need of the hour is a better understanding of maternal antenatal factors contributing low birth weight, so that incidence of low birth weight can be decreased and intact survival of low birth weight can be ensured. Keeping this in mind the present study was planned.

MATERIAL AND METHODS

A retrospective study was conducted in Panna Dhai Zanna Hospital Udaipur of a total of 500 mothers with documented pre term labor who delivered between 26 week to 36 week and their babies weighing less than 2.5 kg. The maternal details like demographic profile, antenatal profile, medical complication during pregnancy, Ante partum hemorrhage, definite cause of pre term labor if any, treatment profile; intranatal care and delivery outcome was collected.

RESULTS

Present retrospective study is based on evaluation of 500 mothers with documented preterm labor who delivered between 26-36 week and their babies weighing <2.5 kg. The duration of study was from July 2006 to December 2006.

Out of 500 mother 68% were not registered to ANC clinic (Not booked). Maximum mothers were from rural class i.e. 66.6%. 41% of mothers were from teenage group. 58.8% mothers were illiterate. Maximum mothers belonged to lower socio-economic status i.e. 56.8% and Muslim class i.e. 57.80%. Majority of mothers were Multipara i.e. 72.6%. 65.2% and 54.6% of mothers with height <150 cm and weight <45 kg respectively gave birth to LBW babies. Anemia 35.25%, Gestational Ht

12%, Maternal Infection 10.4% In Mothers proved to be the major contributing factor for LBW babies.

Table – 1. Different Risk factors affecting Birth weight of new born.

Risk factors	Characteristics	Number of LBW	Percentage
Antenatal care	Booked	160	32.00
	Not booked	340	68.00
Residence	Urban	167	33.4
	Rural	333	66.6
Education	Literate	50	10.00
	Semi Literate	156	31.20
	Illeterate	294	58.80
Age	< 17 years	205	41.00
	17-34 years	55	11.00
	> 34 years	240	48.00
Sex	Male	207	41.40
	Female	293	58.60
Socio-economic Status	Upper	66	13.20
	Middle	150	30.00
	Lower	284	56.80
Religion	Hindu	182	36.40
	Muslim	289	57.80
	Sikh	3	0.60
	Christian	2	0.40
	Others	24	4.80
Height	< 150 cm	326	65.20
	> 150 cm	174	34.80
Weight	< 45 kg	273	54.60
	> 45 kg	227	45.40
Working Status	Housewife	325	68.42
	Employed	150	31.57
Type of Family	Joint	290	61.05
	Nuclear	185	38.94
Parity	Primi Para	137	27.40
	Multi Para	363	72.60
Mode of Delivery	Spontaneous	296	59.20
	Induced	87	17.40
	LSCS	117	23.40
High Risk Pregnancy	Anaemia	176	35.20
	Gestational Hypertension	60	12.00
	Maternal Infection (UTI, TB)	52	10.40
	Antepartum Haemorrage	40	8.00
	Previous H/O Preterm	40	8.00
	Under Nutrition	36	7.20
	Multiple Pregnancy	22	4.40
	Twin	19	3.80
	Triplet	3	0.50
	Heart Disease	15	3.00
	Uncontrolled Diabetes	4	0.80
	Others (Smoking, Alcohol, Pollution)	55	11.00

DISCUSSION

Table no 1.shows that 68% of unbooked mother delivered LBW babies thus clearly signifying the importance of antenatal care. About 66.6% of rural mothers delivered LBW babies reason being illiteracy, poverty, malnutrition and lack of proper antenatal care. The present study is compatible with Gebremariam A.et al, Dhar B et al, Khan N et al, Nair NS et al. [7-10] The present study is not compatible Roy KK et al, Hosain GM et al. [11,12]

Above table depicts that teenage (41%) and elderly (48%) mothers are more prone to give birth to LBW babies as compared to normal reproductive age group mothers (11%) as teenage girls are not mentally and physically fit for motherhood and elderly mothers are more prone to hypertension PIH APH chromosomal abnormalities.[13] The present study is compatible with Nasreen SA et al.[14] Who reported 38.2% LBW babies in teenage.

Education constitutes main factor in influencing health status of mother and child as also shown by the table no.1 where only 10% of the literate mother had LBW babies because educated mothers take proper ante natal care and are not only conscious about their own health but also the health of their baby. The present study is similar to Dhar B et al and Begum F et al. [8,15]

Socio-economic status also plays an important role in deciding the fate of a child. Above table shows that 56.8% of mothers belonging to lower class had LBW babies, as this class suffer from variety of problems like illiteracy, poverty, malnourishment, multiparty.The present study is similar to, Dhar B et al, Khan N et al, Nair NS et al, and Begum F et al. [8-10,15]

The Muslim class (57.80%) proved to be the major defaulter as depicted in the above table the reasons being illiteracy and poor socio-economic status and religious beliefs, lack of contraceptive practices, multiparty hence short birth interval, malnourishment, anemia, and hence a vicious cycle starts which ends in LBW babies. The present study is quite close to Nair NS et al. and Zhang X et al, [10,16] But the present study is not similar to Gebremariam A et al [7] who reported negative association between parity and LBW.

Above table shows that 65.2% and 54.6% of mothers with height < 150 cm and weight < 45 kg respectively gave birth to LBW babies suggesting that constitutional factors also play important role in determining weight of baby. The present study is quite close to Gebremariam A. et al, Dhar B et al, Begum F et al, Wannous S et al. [7,8,15,17]

The present study clearly depicts that ANEMIA 35.25% in mothers proved to be the major contributing factor for LBW babies. Pregnancy Induced Hypertension (PIH), infections, A.P.H. previous preterm births, multiple pregnancies being other additional factors. The present study is compatible with Zhang X et al, Wannous S et al. [16-18]

One of the major drawbacks of infertility treatment is ovulation hyper stimulation resulting in TWIN (3.8%) and TRIPLET pregnancies (0.6%), which indirectly contributes to LBW babies as depicted from above table.

CONCLUSION

The destiny of new born is to an extent already determined.

-Dr. David J P Barker

In an era of hope kindled by awesome scientific advances we live in India with the paradox of high figures of pre term birth which is one of the major clinical problems in Obstetrics and neonatology as it is associated with perinatal mortality, serious neonatal morbidity and in some case childhood disability. It is reported that 60% - 80% of all neonatal mortality and morbidity is due to pre term birth. A number of maternal antenatal factors like ANC status, Age, Height, Weight, Religion, High-Risk pregnancy contributes to pre term birth as evident from the above study.

Today's health system requires more information about Maternal antenatal factors, more antenatal interference for proper management of high risk mothers and advancement in perinatal and neonatal expertise, provision of good neonatal ICU facilities to ensure intact new born survival.

Recommendations

1. Maternal antenatal high risk factors contribute to preterm birth should be identified earlier by adequate antenatal care so that timely medical intervention can be done.
2. Advancement in perinatal and neonatal treatment, expertise and

improvement in case of high risk mothers.

3. Organization of good quality NICU facilities and surfactant treatment to reduce the neonatal mortality and improve quality of life among the survivors.
4. Training of medical and other health personnel at PHC level in identifying high risk mothers and care of preterm babies.

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