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Original research article

Clinical profile of very low birth weight babies at a tertiary care hospital

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Abstract

Respiratory distress syndrome is noted in approximately 80% of infants 501–750 g; in 65% of those 751–1,000 g; in 45% between 1,001 and 1,250 g; and in 25% between 1,251 and 1,500 g. Severe intraventricular hemorrhage (IVH) is noted in approximately 25% of infants 501–750 g; in 12% between 751 and 1,000 g; in 8% between 1,001 and 1,250 g; and in 3% between 1,251 and 1,500 g. The parents of these eligible babies will be contacted at postnatal age of 11 months and will be asked to come for a checkup between 11.5 to 12.5 months of age. An informed consent for enrollment in the study will be taken telephonically and written consent is taken on arrival for outpatient visit. During this visit length, weight and head circumference are measured by standard methods. Among infants born with birth weights of 2,500 grams or less, the relative risk of rehospitalization in one study was about twice that of heavier infants, and again, these infants had longer lengths of stay in the hospital.

Keywords: Very low birth weight babies, rehospitalization, respiratory distress syndrome

Introduction

VLBW neonates are vulnerable population. They tend to develop multiple complications. Immature organ function, complications of therapy, and the specific disorders that caused the premature onset of labor contribute to neonatal morbidity and mortality associated with VLBW neonates [1]. Among VLBW infants, morbidity is inversely related to birth weight. Respiratory distress syndrome is noted in approximately 80% of infants 501–750 g; in 65% of those 751-1,000 g; in 45% between 1,001 and 1,250 g; and in 25% between 1,251 and 1,500 g. Severe intraventricular hemorrhage (IVH) is noted in approximately 25% of infants 501–750 g; in 12% between 751 and 1,000 g; in 8% between 1,001 and 1,250 g; and in 3% between 1,251 and 1,500 g. [2, 3] Overall, the risk of late sepsis (24%), bronchopulmonary dysplasia (23%), severe IVH (11%), necrotizing enterocolitis (7%), and prolonged hospitalization (45–125 days) is high in VLBW. Poor postnatal growth is an important problem for both preterm and IUGR infants [4].

Methodology

All the babies admitted to NICU on day one of life with birth weight/admission weight of less than 1500g are eligible for inclusion. These babies will be regularly followed up in outpatient department.

The parents of these eligible babies will be contacted at postnatal age of 11 months and will be asked to come for a checkup between 11.5 to 12.5 months of age. An informed consent for enrollment in the study will be taken telephonically and written consent is taken on arrival for outpatient visit. During this visit length, weight and head circumference are measured by standard methods as described below:

- Length is measured using a standard infantometer. Infant is placed in supine position on infantometer. An assistant/mother is asked to keep the vertex or top of the head snugly touching the fixed vertical plank so that external auditory meatus and lower margin of orbits are aligned perpendicular to the table. The legs are fully extended by pressing over the knees and feet are kept vertical at 90°. The non-movable pedal plank of infantometer is snuggly apposed against the soles and length is measured from scale to the nearest 0.1 cm.
- Weight is measured using an electronic weighing scale with an accuracy of +/- 5 g.
- Head circumference is measured using a non-stretchable fiber glass tape. Occipitofrontal head circumference is measured, by encircling the tape over the most prominent parts of occiput i.e. plane of supraorbital ridge anteriorly and external occipital protuberance posteriorly with sufficient pressure to compress hair and occipitofrontal circumference is recorded to the nearest 0.1 cm

All these parameters will be plotted on WHO growth chart and percentile of these measurements will be noted.

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A standard questionnaire will be given to the parents (Mother and/or father who will accompany the baby during this visit) and they will be asked to complete the questionnaire about their baby's respiratory symptoms and treatment requirements and possible risk factors. The primary investigator will explain the questionnaire to parents and help them in filling the questionnaire.
The antenatal, intrapartum and postnatal data will be collected from Inpatient records of these cases. The data will be entered in Microsoft excel 2007 format and statistical analysis will be done.

Results

Table 1: Antenatal and intrapartum morbidities

	Weight N (%)	**Length**	**Head circumference**
less than 3rd	8	6	4
3-10th	11	5	6
10-50th	23	19	15
50-90th	3	9	12
90-97th	0	4	2
More than 97th	0	2	6

Parameters	**Group 1 (Follow up, n=29)**	**Group 2 (Lost to follow up, n=12)**	**Group 3 (Dead, n=4)**
PIH	13	6	2
DM	6	0	0
Antenatal Steroids			
Prom	2	3	0
BMV	6	1	2
Intubation	2	1	1
CPAP	7	1	2
IMV	2	1	2
surfactant	2	1	1
TPN	4	1	0
Apnea	15		
Sepsis	7		
IVH	1		
PDA	6		

Discussion
The most frequently cited evidence of a higher risk for adverse health status among low birth weight and preterm infants is an increased risk of rehospitalization during the first few years of life. Infants born weighing 1,500 grams or less are four times more likely than normal birth weight infants to be hospitalized in the first year of life (McCormick *et al*.) and are more likely to have a disproportionate duration of stay for these hospitalizations [5].
Among infants born with birth weights of 2,500 grams or less, the relative risk of rehospitalization in one study was about twice that of heavier infants, and again, these infants had longer lengths of stay in the hospital.
The increased risk of rehospitalization for preterm and low birth weight infants is likely a reflection of their compromised health status. Children born with birth weights below 1,500 grams suffer increased morbidity compared to children with normal birth weights [6].
The psychosocial environment is also important for children born with birth weights below 2,500 grams, as those with high psychosocial risk have worse health status than children in low and moderate risk categories.
Furthermore, in comparison to children with normal birth weights, chronic health conditions have a stronger impact on the school achievement and participation, and behavior problems of children with birth weights below 2,500 grams [7].
The impact of LBW extends into adolescence. Adolescents with birth weights below 1,500 grams have higher blood pressure than those with normal birth weights [8].

Conclusion
VLBW babies are four times more likely to be hospitalized in the first year of life than normal birth weight infants and are more likely to have a disproportionate duration of hospital stay. The increased risk of rehospitalisation for preterm and very low birth weight infants is likely a reflection of their compromised health status.

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