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LOW BIRTH WEIGHT BABIES BORN AT LIAQUAT UNIVERSITY HOSPITAL HYDERABAD

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Abstract:
OBJECTIVE: To determine the prevalence of low birth weight babies born at Liaquat University Hospital Hyderabad
PATIENTS AND METHODS: This Descriptive study (case series) of six months was conducted at Department of Gynecology & Obstetrics and Neonatal unit of pediatric department LUH Hyderabad. The low birth weight was defined as less than 2500 g. In this study, 1511 babies were born during study period and 565 (37.4%) of them were LBW. Out of these 565 LBW babies, 237 (41.9%) babies with one or more problems were admitted in neonatal unit at Pediatric department LUH Hyderabad for evaluation of immediate problems and their data was collected on preformed proforma by principal researcher and analyzed using SPSS version-10.
RESULTS: Out of total 1511 deliveries at LUH Hyderabad, 565 newborn were LBW giving prevalence of 37.4%. Out of these 565 LBW, male newborn were 55.8% and females were 44.2%, full term LBW were 61.2% while 38.8% were preterm LBW and 67.4% were small for gestational age (SGA) while 32.6% were appropriate for gestational age (AGA). 69.2% had birth weight 2500-1500 g. Babies with birth weight 1499-1000 g and 999-750 g included 27.8% and 3.0% respectively out of these 565 LBW babies.
CONCLUSION: Our study showed increased prevalence of low birth weight (37.4%) as compared to general population (25.0%). low birth weight was common in males and majority of LBW infants were SGA and full-term.
Key Words: Low birth weight, Small for gestational age, Appropriate for gestational age

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INTRODUCTION:

Low birth weight babies are the neonates weighing less than 2500 g at birth and may be due to pre-maturity and/or intrauterine growth restriction (also called small for gestational age) or both. Intrauterine growth restriction accounts for 70% of low birth weight babies in developing countries. [1] They are termed Preterm if born before 37 weeks gestation and small for dates if having birth weight <10thcentile for gestational age. [2,3] 25% of neonates born in Pakistan are low birth weight. [4] Low birth weight is associated with high mortality (40%) as compared to those with normal birth weight. [5] Major problems and causes of mortality (91%) in them are attributed to neonatal sepsis, birth asphyxia and respiratory distress syndrome. [6] Low birth weight is most common risk factor for hypoglycemia (47.47%). [7,8] As birth weight decreases, more problems are faced by these babies i.e. in babies weighing 1000-2000 g, main causes of death include pre-maturity and its related complications(35%), congenital malformation (23%), sepsis (19%) and birth asphyxia (16%). [9] This study was aimed at estimating the prevalence of low birth weight babies born at LUH Hyderabad.

PATIENTS AND METHODS:

This six months descriptive case series study conducted at department of Gynecology & Obstetrics and neonatal nursery of pediatric department LUH Hyderabad. All babies born in LUH Hyderabad during the study period were registered in birth register. Babies with birth weight 2500 g or less were labeled as LBW and 237 LBW babies were enrolled and admitted in nursery at Pediatric department LUH Hyderabad. As this was a descriptive study, no interventions were applied and hospital protocols for management of LBW were applied. Complete data was recorded and reviewed on pre-coded proforma. Data was analyzed using SPSS-10 (Statistical Package for Social Sciences). As this was a descriptive study hence no statistical test was applied. Prevalence of LBW babies out of total live born babies during study period and their characteristics were analyzed and presented in tabulated and graphical forms. Frequencies were calculated as percentage and presented in tabulated form. Effect modifiers or confounding variables like sex, gestational age, degree of low birth weight and day of life were controlled by stratification and were also presented in tabulated form. [Table 1 and 2]

RESULTS:

Total number of deliveries in Liaquat university hospital was 1511 and total number of Low birth weight (LBW) babies were 565 (37.4%) of total deliveries. Out of 565 LBW, 237 (41.9%) LBW babies with one or more problems were admitted in nursery at pediatric department and were evaluated for immediate complications.

Table-1 shows frequency distribution of sex of LBW babies born during study period (n=565). Male newborn comprised of 315 (55.8%) of total 565 LBW babies while female newborn were 250 (44.2%). Ratio of male to female was found as 1.3:1.

Table-1 shows frequency of LBW babies born during study period according to gestational age at birth. Full term babies (>37 completed weeks of gestation) were 346 (61.2%) of total 565 LBW babies and preterm births accounted for 219 (38.8%).

Table-1 shows distribution of 565 LBW babies born during study period according to weight for gestation at birth. During study period, 381 (67.4%) LBW babies were small for gestation (SGA) out of total 565 LBW babies while 184 (32.6%) were appropriate for gestational age.

Table-1 shows distribution of LBW according to birth weight. Out of total 565 LBW babies born during study period, 391 (69.2%) were 2500-1500 g by weight while 157 (27.8%) and 17 (3.0%) newborn weighed 1499-1000 g and 999-750 g respectively.

Table-2 shows sex distribution of 237 LBW admitted in nursery pediatric department out of 565 LBW babies born during study period. 143 (60.3%) of these admitted LBW babies were female while male LBW accounted for 94 (39.7%) out of total 237 admitted LBW babies.

Table-2 shows that 148 (62.4%) LBW babies out of total 237 admitted LBW babies were Full term and 89 (37.6%) were preterm LBW babies.

Table-02 shows distribution of admitted 237 LBW babies according to weight for gestational age at birth. SGA babies admitted were 160 (67.5%) while 77 (32.5%) were AGA out of these 237 admitted LBW newborn.

Table-02 distributes 237 admitted LBW babies by birth weight. It shows that out of these 237 admitted LBW newborn, newborn having birth weight 2500-1500 g comprised of total 133 (56.1%) and babies having babies having birth weight 1499-1000 g and 999-750g numbered as 94 (39.7%) and 10 (4.2%) respectively.

TABLE 1: FREQUENCY DISTRIBUTION OF LOW BIRTH WEIGHT BABIES

PARAMETER	FREQUENCY (N=565)	PERCENTAGE (%)
GENDER		
Male	315	55.8%
Female	250	44.2%
GESTATIONAL AGE		
Full-term LBW	346	61.2%
Preterm LBW	219	38.8%
WEIGHT FOR GESTATION		
SGA	381	67.4%
AGA	184	32.6%
BIRTH WEIGHT (g)		
2500-1500	391	69.2%
1499-1000	157	27.8%
999-750	17	3.0%

LBW: low birth weight; SGA: small for gestation age; AGA: appropriate for gestational age

TABLE 2: FREQUENCY DISTRIBUTION OF ADMITTED LOW BIRTH WEIGHT BABIE

PARAMETER	FREQUENCY (N=237)	PERCENTAGE (%)
GENDER (hospitalized LBW babies)		
Female	143	60.3%
Male	94	39.7%
GESTATIONAL AGE		
Full-term LBW	148	62.4%
Preterm LBW	89	37.6%
WEIGHT FOR GESTATION		
SGA	160	67.5%
AGA	77	32.5%
BIRTH WEIGHT (g)		
2500-1500	133	56.1%
1499-1000	94	39.7%
999-750	10	4.2%

LBW: low birth weight; SGA: small for gestation age; AGA: appropriate for gestational age

DISCUSSION:

We conducted this study at Liaquat university hospital Hyderabad, Sindh to determine prevalence of LBW babies at Liaquat university hospital, Hyderabad and immediate problems associated with LBW babies during 1st three days of life. Our study showed that during study period, 1511 babies were born and 565 of them were LBW comprising 37.4% of all births. This result is consistent with the studies from Peshawar and from Lahore which have almost same pattern of LBW that is 40.7% and 39.0%. While LBW was less in other studies like 16% from Kohat, studies from neighboring countries like India and Bangladesh reported LBW rates of 26.78% and 13.25%. This increase in LBW may be due to malnutrition, poverty and lack of knowledge about antenatal care. [10,14]

In our study male LBW babies were more as compared to female LBW babies i.e. 315 (55.8%) vs 250 (44.2%) with ratio of 1.3:1. Memon et al study [15] and Khan et al study [16] also reported same pattern of LBW in males and females. This pattern is contrary to findings by Singh et al study on incidence and risk factors of low birth weight babies born in Dhulikhel hospital, Nepal. The study reported that out of 401 LBW babies, 58.9% (n=236) were female LBW babies while 41.1% (n=165) male LBW babies. [17] This may be due to male dominant society where male babies are preferred and delivered in health set-ups.

In our study, Full term LBW babies were 346 (61.2%) as compared to 219 (38.8%) preterm LBW and small for gestational age (SGA) LBW were 381 (67.4%) while 184 (32.2%) LBW babies were appropriate for gestational age (AGA). Newborn babies weighing 2500-1500 g comprised of 391 (69.2%) while 157 (27.8%) and 17 (3.0%) newborn babies were very low birth weight (1499-1000 g) and extremely low birth weight (999-750 g) respectively. No newborn with birth weight 749 g or less was born during study period. Multiple studies have shown same patterns/characteristics for LBW babies. Rahman et al conducted an analytical study of prevalence, birth weight and gestational age specific mortality of AGA and SGA low birth weight in Khyber teaching hospital Peshawar and reported that out of total 727 LBW babies, 50.2% new born were SGA and 49.8% were AGA. Among SGA babies 69.9% were term SGA babies. [18] Begum et al study conducted in Bangladesh on 50 preterm babies reported that male babies (56.0%) dominated female babies (44.0%) and 56.0% of the babies weighed LBW while 40.0% and 2.0% were extremely low birth weight (ELBW) and very low birth weight (VLBW) respectively. [19] Khan et al study reported 42.2% LBW, 23.98% VLBW and 6.85% ELBW babies. [16]

We recommend health education of mothers and strengthening of health care facilities at both community and facility levels to overcome the burden of LBW. Strategies and interventions should be identified for timely recognition and management of problems in LBW babies.

CONCLUSION:

In present study, the prevalence of low birth weight is 37.4%. We recommend further studies analyzing risk factors and mechanisms behind this varying prevalence, characteristics and problems of LBW with large sample size and multiple settings to reach firm conclusion.

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