Neonatology

"A STUDY OF MATERNAL FACTORS INFLUENCING VERY LOW BIRTH WEIGHT BABIES"

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ABSTRACT **Background:** In developed countries, because of improvement in health care facilities and increased funds spent for health ,the problem of VLBW has been reduced. But in developing countries like India, where lacunae in health care facilities and funds, the survival and long term complications of very low birth weight babies still remain the challenge. **Objectives:** 1.To study the influence various maternal factors like age, parity, occupation, obstetric history etc on the outcome of birth weight babies. **Materials And Methods: Study design:** Prospective case control study **Study area:** Government general hospital, siddhartha medical college, vijayawada, Krishna district, Andhra pradesh. **Study period:** January 2019 to July 2019. **Study population:** All newborn babies with birth weight <1500 gms irrespective of gestational age **Sample size:** Study consisted of 100 newborns (50 cases and 50 controls). **Sample method:** Simple random sampling method. **Study tools and data collection:** All newborns less than 1500 gms irrespective of gestational age, examined and detailed antenatal, natal history was obtained and recorded. **Results:** The incidence of very low birth weight newborn was found to be 2.08%, and the most common cause is preterm delivery. There is NO relation found between family structure, mother occupation, antenatal visits and incidence of very low birth weight. As the literacy rate of mothers increases, the weight of the baby increases. **Conclusion:** Birth weight of babies has significant association with maternal factors like parity, birth interval and previous bad obstetric history. Literacy rate of mothers had a positive correlation.

KEYWORDS :

INTRODUCTION
- WHO defined LBW as weight less than <2.5 kg at birth irrespective of their gestational age, VLBW is defined as weight <1.5 kgs irrespective of their gestational age
- In developed countries, because of improvement in health care facilities and increased funds spent for health ,the problem of VLBW has been reduced. But in developing countries like India, where lacunae in health care facilities and funds, the survival and long term complications of very low birth weight babies still remain the challenge.
- The high incidence of neonatal morbidity and mortality in our country is due to neglect of maternal health, education, empowerment of women in society, early teenage ,marriages, frequent pregnancies bad obstetric history, maternal diseases, infections are important factors for the incidence of VLBW.
- Keeping all these in views, an attempt was made to carry out a study on maternal factors with VLBW.

METHODS
- Prospective case control study was conducted in in govt general hospital, Vijayawada which is affiliated to Siddhartha medical college during the period of January 2019-July 2019

Inclusion Criteria
- Live singleton pregnancies
- All newborns delivered in SMCH and admitted in SMCH NICU with weight <1.5 kgs,irrespective of gestational age.

Exclusion Criteria
- Still birth
- Multiple pregnancies
- Congenital anomalies

- **Sample population :**a equal number of newborns of weight ≥2.5kgs selected by simple randomized techniques on the very same day of selection of study (control)

- A total of 50 controls and 50 cases were included in the study.

MATERNAL VARIABLES
- Mother age

- Weight
- Height
- Parity
- Birth interval
- Occupation
- Maternal disease (PIH,DM,oligohydramnios,Hepatitis,thyroid disease,cervical incompetence)
- Bad obstetric history   NEWBORN VARIABLES
- Sex
- Gestational age of baby (from modified ballard score examination)

Statistical Analysis
- Analysis between study and control group were analyzed using pearson chi square test
- Test is considered as significant if p value < 0.05

RESULTS
- A total number of 108 newborns with birth weight less than 1500 gms were admitted in NICU out of newborn in 6 months. In that 6 are multiple births and 2 had major congenital malformations. On excluding both multiple births and congenital malformations, only 100 newborns were included in the study for 6 months. The incidence of VLBW newborns was found to be 2.08%.
- The most common cause of VLBW is preterm delivery. In that preterm AGA constitutes 92 %. The remaining 8% is from term SGA babies .
- There is no relation found between family structure, mother's occupation, antenatal visits and the incidence of very low birth weight.
- Literacy rate of the mother increases and the weight of the baby also increases.

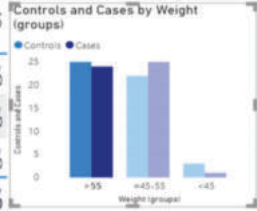| Age (groups)	Cases	%GT Cases	Controls	%GT Controls
<20	8	16.00%	9	18.00%
=20-30	42	84.00%	37	74.00%
>30	0	0.00%	4	8.00%
Total	50	100.00%	50	100.00%

Mother age is divided into three groups. <20, 20-30 >30. Mother age does not have statistical significance in our study. With p value-0.2

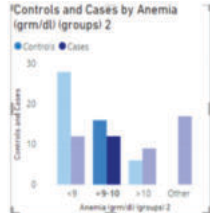| Height (groups)	Cases	%GT Cases	Controls	%GT Controls
<145	12	24.00%	4	8.00%
=145-155	28	56.00%	25	50.00%
>155	10	20.00%	21	42.00%
Total	50	100.00%	50	100.00%
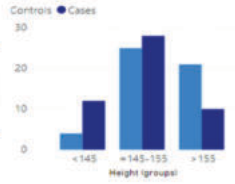
HEIGHT is into above three groups.Height have statistical significance p value-0.01divided

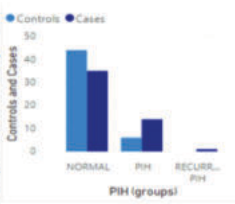| Weight (groups)	Cases	%GT Cases	Controls	%GT Controls
<45	1	2.00%	3	6.00%
=45-55	25	50.00%	22	44.00%
>55	24	48.00%	25	50.00%
Total	50	100.00%	50	100.00%

Weight is divided into three groups. <45, 45-55, >55. Weight have statistical significance p value-0.01

| Anemia (grm/dl) (groups) 2	Cases	%GT Cases	Controls	%GT Controls
<9	12	24.00%	28	56.00%
=9-10	12	24.00%	16	32.00%
>10	9	18.00%	6	12.00%
Other	17	34.00%	0	0.00%
Total	50	100.00%	50	100.00%

Anemia is divided into three groups. <9, 9-10, >10. Anemia has statistical significance p value-0.02

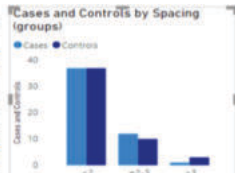| PIH (groups)	Cases	%GT Cases	Controls	%GT Controls
NORMAL	35	70.00%	44	88.00%
PIH	14	28.00%	6	12.00%
RECURRENT PIH	1	2.00%	0	0.00%
Total	50	100.00%	50	100.00%

PIH is divided into three groups. Normal, PIH, Recurrent PIH. PIH has no statistical significance p value-0.1

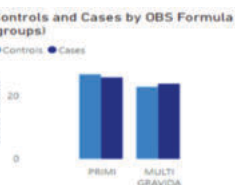| DM (groups)	Cases	%GT Cases	Controls	%GT Controls
GDM	5	10.00%	7	14.00%
NO GDM	45	90.00%	43	86.00%
Total	50	100.00%	50	100.00%
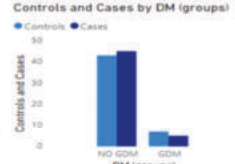
DM is divided into two groups. GDM, No GDM. GDM has statistical significance p value-0.01

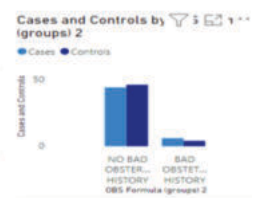| Spacing (groups)	Cases	%GT Cases	Controls	%GT Controls
<2	37	74.00%	37	74.00%
=2-3	12	24.00%	10	20.00%
>3	1	2.00%	3	6.00%
Total	50	100.00%	50	100.00%

Birth spacing is divided into the above groups. spacing <2 yrs have significant statistical significance with p value-0.05

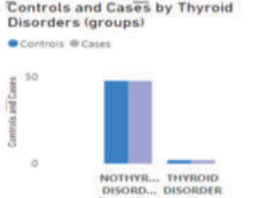| OBS Formula (groups)	Cases	%GT Cases	Controls	%GT Controls
MULTI GRAVIDA	24	48.00%	23	46.00%
PRIMI	26	52.00%	27	54.00%
Total	50	100.00%	50	100.00%

Gravida is divided into the above two groups. primi gravida has a significant association with very low birth rate with p value 0.01.

| OBS Formula (groups) 2	Cases	%GT Cases	Controls	%GT Controls
BAD OBSTETRIC HISTORY	6	12.00%	4	8.00%
NO BAD OBSTETRIC HISTORY	44	88.00%	46	92.00%
Total	50	100.00%	50	100.00%

Boh is divided into the above two groups. BOH, no BOH. It has statistical significance.p value 0.03.

Thyroid Disorders (groups)	Cases	%GT Cases	Controls	%GT Controls
NOTHYROID DISORDERS	48	96.00%	48	96.00%
THYROID DISORDER	2	4.00%	2	4.00%
Total	50	100.00%	50	100.00%

Thyroid is divided into the above two groups. No significance p value 0.1

Sex (groups)	Cases	%GT Cases	Controls	%GT Controls
FCH	24	48.00%	21	42.00%
MCH	26	52.00%	29	58.00%
Total	50	100.00%	50	100.00%
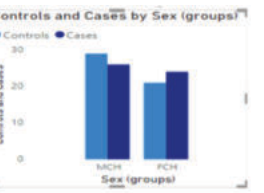
Sex no significance. P Value 0.5

DISCUSSION
- In this study incidence of VLBW 2.08%.
- Most common cause of VLBW is preterm delivery which is around 84%.
- Significant association between primi gravida and VLBW.
- Incidence of VLBW is higher when the birth interval is <2yrs when compared to more than 2yrs.
- Mothers height has a significant relation between VLBW.

CONCLUSION
- VLBW of babies has significant association maternal factors like parity literacy, birth interval, and previous bad obstetric history
- Hence the study implies that pregnant women should be counseled continuously by skilled health persons and nutritionists
- Higher incidence with mother weight <40 kgs.
- Mothers literacy had a strong positive relationship.
- No association between uterine and cervical anomalies.
- Significant association between BOH and VLBW.

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