Low Birth Weight Babies- Risk Factors and Complications: A Clinical Study

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ABSTRACT

Introduction: Birth weight is important criterion for determining the neonatal and infant survival. Low Birth Weight (LBW) indicates socio-economic conditions and indirectly measures the health of the mother and the child. The present study was conducted in the department of Obstetrics and Gynaecology to evaluate the factors leading to low birth babies and complications.
Material and Methods: The present study was conducted in the department of Obstetrics and Gynaecology in year 2011. It included 250 babies delivered with weight less than 2.5 kg. Patients information such as name, age, parity, pre-pregnancy body mass index (BMI), hemoglobin levels, bad obstetric history pre eclampsia, fetal distress, mode of deliveries were recorded. These results were compared with a random sample of 100 pregnant ladies (control).
Results: Out of 250 delivered babies, 30 were low birth weight. The prevalence rate was 12%. The number of babies with <20 BMI in LBW was 9 and in control group was 15 while with 20-25 in LBW was 18 in control it was 45. >25 BMI was seen in 3 babies with LBW while it was 40 in control group. The difference was significant (P<0.05). Pregnancy complications in LBW and control group. These included bad obstectric history, anaemia with Hb less than 11gm%, pre-eclampsia, preterm delivery, PROM and malpresentation. The difference was significant in both groups (P<0.05). In LBW group 18 were illiterate and 12 were had education upto primary level while in control group 55 had education upto primary level and 45 were illiterate. 10 were housewife and 20 were labourers in LBW group while 56 were housewife and 44 were labourer in control group. The difference was significant in both groups (P<0.05).
Conclusion: Patients with poor socio-economic status are more prone to develop LBW babies. Most common complications are bad obstectric history, anaemia, pre-eclampsia, preterm delivery, PROM and malpresentation.

Keywords: Anaemia, Fetal distress, Pre-eclampsia

INTRODUCTION

Birth weight is important criterion for determining the neonatal and infant survival. Low Birth Weight (LBW) indicates socio-economic conditions and indirectly measures the health of the mother and the child. Low birth weight (LBW) is the main risk factor for infant morbidity and mortality constitutes about 4 million deaths per year. Some term and preterm small babies are healthy, with weight and length according to their genetic potential, while others are smaller due to factors impeding growth during fetal life. This phenomenon is called intrauterine growth restriction (IUGR) and is the second leading cause of perinatal morbidity and mortality, after prematurity.[1]
Low birth weight lower than that expected from the genetic potential might be caused by fetal, maternal or placental factors or a combination of risk factors, resulting in an impaired placental transport of nutrients or reduced growth potential of the fetus.[2] Constitutional, gender and hereditary factors explain up to 40% of the variability of birth weight. Some factors such as maternal age, ethnicity, marital status, birth interval, educational level play important role. Common fetal factors are genetic and/or chromosomal aberrations. Chronic conditions like hypertension, renal insufficiency, cardio-respiratory, autoimmune, endocrine or infectious disorders are also risk factors. The morbidities of term and moderately preterm (>32 weeks) LBW are mainly related to uteroplacental insufficiency and poor energy substrate transfer, resulting in neonatal complications like birth asphyxia, hypothermia, meconium aspiration, polycythaemia, hypoglycemia, hypocalcaemia and thrombocythaemia.[3]
The present study was conducted in the department of Obstetrics and Gynaecology to evaluate the factors leading to low birth babies.

MATERIAL AND METHODS

The present study was conducted in the department of Obstetrics and Gynaecology in year 2011. It included 250 babies delivered with weight less than 2.5 kg. Patients were informed regarding the study and written consent was taken. Patients information such as name, age, parity, pre-pregnancy body mass index (BMI), hemoglobin levels, bad obstetric history (history of stillbirth/ neonatal death in previous pregnancies, three or more spontaneous consecutive abortions), pre eclampsia, fetal distress, mode of deliveries were recorded. These results were compared with a random sample of 100 pregnant ladies (control). Results thus obtained were tabulated and subjected to statistical analysis using chi square test. P value <0.05 was considered significant.

RESULTS

Table-1 shows that out of 250 delivered babies, 30 were low birth weight. The prevalence rate was 12%. Table-2 shows that the number of babies with <20 BMI in LBW was 9 and in control group was 15 while with 20-25 in LBW was 18 in control it was 45. >25 BMI was seen in 3 babies with LBW while it was 40 in control group. The difference was significant (P<0.05).
Figure-1 shows that pregnancy complications in LBW and control group. These included bad obstectric history, anaemia with Hb less than 11gm%, pre-eclampsia, preterm delivery,

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International Journal of Contemporary Medical Research
ISSN (Online): 2393-915X; (Print): 2454-7379 | ICV (2015): 77.83 | Volume 4 | Issue 1 | January 2017

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Total	Low birth weight	Prevalence
250	30	12%
Table-1: Distribution of patients		

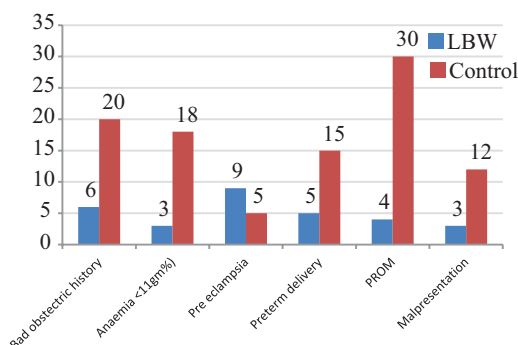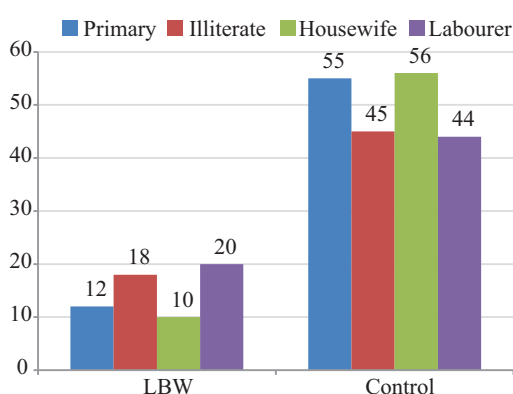| Prepregnancy BMI Weight (Kg) /height(m²)	Low birth weight (LBW) (30)	Control (100)	P value
<20	9 (30%)	15 (15%)	0.02
20-25	18 (60%)	45 (45%)	0.05
>25	3 (10%)	40 (40%)	0.001
Table-2: Prepregnancy body mass index (BMI) between low birth weight (LBW) and control group			

Figure-1: Complication in LBW and control group

Figure-2: Socioeconomic status

PROM and malpresentation. The difference was significant in both groups (P<0.05). Figure-2 shows that in LBW group 18 were illiterate and 12 were had education upto primary level while in control group 55 had education upto primary level and 45 were illiterate. 10 were housewife and 20 were labourers in LBW group while 56 were housewife and 44 were labourer in control group. The difference was significant in both groups (P<0.05).

DISCUSSION

LBW infants are forty times more likely to die within their first four weeks of life than normal birth weight infants. LBW infants are also three times more likely than normal birth weight infants to have neurodevelopmental complications and congenital abnormalities. The present study was conducted in the department of Obstetrics and Gynaecology to evaluate the factors leading to low birth babies. Out of 250 delivered babies, 30 were low birth weight. The prevalence rate was 12%. The study by Zlot A[4] reported 18% prevalence rate. We also evaluated the BMI in LBW group and control group. The difference was significant. Similar results were obtained in study of Osrin D et al.[5]

We calculated the pregnancy complications in LBW and control group. These were bad obstectric history, anaemia with Hb less than 11gm%, pre-eclampsia, preterm delivery, PROM and malpresentation. The most common complication in LBW group was pre-eclampsia while in control group it was PROM. However, Kapoor[6] reported preterm delivery to be the main reason. We also evaluated the literacy level in both groups. The difference was significant. This show that illiterates were more prone to LBW babies than with educated patients. Similary patients who were laborers were more likely to have LBW babies. Similar results were seen in study by Scheive LA et al,[7] Neggers Y et al.[8] and Verma et al.[9]

CONCLUSION

Patients with poor socio-economic status are more prone to develop LBW babies. Most common complications are bad obstetric history, anaemia, pre-eclampsia, preterm delivery, PROM and malpresentation.

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