



MATERNAL OUTCOME IN UNDERWEIGHT MOTHER (BMI LESS THAN 18.5 KG/MT)

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ABSTRACT

Background: Maternal dietary nutrient intake during pregnancy is essential for better maternal health. nutritional deficiency can lead conditions like anemia. our objective was to study maternal outcome in underweight mothers. **Method:** The cross-sectional observational study was done at obstetrics and gynaecology department of new civil hospital Surat for 8 month (January 2021 to august 2021) period after official approval from ethical committee. **Result:** Majority (61%) of subjects belongs to age group of 18 to 25 year. 58% of subjects belongs to rural area. 55% of subjects were from upper lower socioeconomic class. 51% of subjects had weight of >35 kg in 1st trimester. 54% of subjects had weight of >40 kg at time of delivery. Majority (53%) of subjects had weight gain of 6 to 10 kg. Majority of subjects(11%) of required blood transfusion due to chronic anemia, 4% subjects required blood transfusion due to PPH, 2% required due to antepartum hemorrhage. **Conclusion:** To decrease undernutrition, government shall focus to improve female literacy rate and on nutritional awareness program for reproductive age women in rural, urban population and low socioeconomic class. To decrease maternal morbidity associated with undernutrition, We shall focus on periconceptual, antenatal and postnatal focused dietary counselling.

KEYWORDS :

INTRODUCTION

Maternal dietary nutrient intake during pregnancy plays a key role in the growth of the fetus. In population, Malnutrition is very common particularly it increases during pregnancy. Whenever pregnant women suffer by this condition; their fetus is also affected. [1] Understanding the relation between maternal nutrition and birth outcomes may provide a basis for developing nutritional interventions that will improve birth outcomes and long-term quality of life and reduce mortality, morbidity, and health-care costs.[2]

Securing access to nutritious, safe, affordable and sustainable diets, along with essential nutrition services and positive nutrition practices, is fundamental to women's survival, health and well-being. Maternal body mass index (BMI) and gestational weight gain (GWG) represent the major determinants of maternal adaptation to incremental energy needs during pregnancy. [3]

According to 2009 IOM/NRC13 guidelines for rate of total weight gain during pregnancy for women with singleton foetus are: For women with a BMI < 18.5 Kg/m², a weight gain of 28– 40lb (12.7Kg -18.1 Kg) was recommended; with a BMI of 18.5-24.9 Kg/m², a weight gain of 25–35lb (11.3Kg-15.8 Kg) is recommended. [4]

Maternal under nutrition associated with anemia, poor pregnancy outcome, puerperal sepsis, postpartum depression, lactational failure. The aim of the present study was to distinguish the effect of maternal undernutrition on the pregnancy outcome.[4]

So we want to study maternal outcome in underweight mothers in our institute. So we can further improve our prenatal, intranatal, postnatal care in underweight mothers in pregnancy.

The global prevalence of under nutrient women is 9.1 %. According to NFHS 5 survey, the overall prevalence of undernutrition in female is 9.7%. in Gujarat, prevalence of undernutrition is 25% according to NFHS 5 survey.[6]

MATERIAL AND METHODOLOGY:

The cross sectional observational study was done at obstetrics and gynaecology department of new civil hospital Surat for 8 month period (January 2021 to august 2021) after official approval from ethical committee.

Number Of Patients:

All consecutive consenting mother (approx. 100 deliveries) with BMI less than 18.5 kg/mt²(as per WHO criteria)in active labour admitted in labour room of tertiary health care center were enrolled in this study.

Inclusion Criteria:

All consenting mother with BMI less than 18.5 kg/mt²(as per WHO criteria) admitted in labour room of tertiary health care center of south Gujarat.

Exclusion Criteria:

- 1) mother with BMI > 18.5 Kg/mt²
- 2) non consenting subjects
- 3) BMI not available on mamta card.

Table No.1 Antenatal Variables(n= 100)

GESTATIONAL AGE AT DELLIVERY	PERCENTAGE
1. <22 WEEK	1
2. >22 TO <34 WEEK	1
3. >34 WEEK TO <37 WEEK	15
4. >37 WEEK TO 42 WEEK	80
5. >42 WEEK	3
WEIGHT GAIN	
1. 1 to 5 kg	44
2. 6 to 10 kg	53
3. 10 to 15 kg	03
ANTENATAL MORBIDITY	
1.ANEMIA	22
2.GESTATIONAL HYPERTENSION	2
3.PRE ECLAMPSIA	04
4 ECLAMPSIA	1
5.GESTATIONAL DIABETES	1
6.MALPRESENTATION	0
7.PLACENTA PREVIA	1
8.ABRUPTIO PLACENTA	2

9.PROM	9
10.POSTDATISM	07
11.IUGR	13
12.IUFD	1
13.ABORTION	0
14.OTHERS	2
OUTCOME	
1.VAGINAL DELIVERY	71
2.LSCS	29

In our study majority of subjects were presented at gestational age of >37 weeks. Post dated pregnancy noted in 3% of subjects. while 17% subjects had preterm delivery. According to WHO , the rate of preterm delivery is 0.17%. majority of subjects (53%) had weight gain between 6 to 10 kg, while 44% of subjects had weight gain of 1 to 5 kg, while only 3% of subjects had weight gain of 10 to 15 kg. majority of subjects (22 %) had anemia antenatally.13% subjects had IUGR baby, 11% of subjects had moderate anemia, while 6% had severe anemia, 5% of mild anemia. 9% of subjects had PROM, while 7% of subjects had postdated pregnancy. 2% of subjects had heart disease. While some of subjects had condition like gestational hypertension, gestational diabetes, placenta previa, abruptio placenta, IUGR, IUFD.

Table No.2 Intranatal And Postnatal Morbidity(n= 100)

INTRANATAL MORBIDITY	PERCENTAGE
1 PERINEAL TEAR	9
2 NON PROGRESS OF LABOUR	2
3 OBSTRUCTED LABOUR	00
4 DYSTOCIA	00
5 FETAL DISTRESS	7
6 MECONIUM STAINED LIQUOR	7
7 EXCESSIVE BLOOD LOSS	00
POSTNATAL MORBIDITY	
1 PPH	4
2 POST PARTUM PSYCHOSIS	00
3 PURPURAL SEPSIS	00
4 POST PARTUM ECLAMPSIA	00
5 HELLP SYNDROME	00
6 RETAINED PLACENTA	00
7 CS WOUND INFECTION	2
8 EPISIOTOMY WOUND INFECTION	3
9 LACTATION FAILURE	4

our study, 9% of subjects had perineal tear, while 7% subjects had fetal distress intranatally and 7 % of subjects had meconium stained liquor intranatally. 4% of subjects had developed Post partum hemorrhage.3% were atonic PPH and 1% was mixed PPH, which managed medically. While 3% of subjects had developed episiotomy wound infection which was managed by dressing and IV antibiotics and no surgical intervention was required. 4% of subjects had developed lactational failure, for that nipple shield and lactacare powder was prescribed .2% of subjects had cs wound infection , both were managed by resuturing.

DISCUSSION

During pregnancy, women have increased dietary requirements to support changes in maternal tissues, metabolism, and foetal growth and development. Compared with pre-pregnancy, energy requirements increase by an average of 300 kcal/day during pregnancy.[In addition, pregnancy also increases women's need for protein, vitamins and minerals such as iron, folic acid and calcium. Women who are breastfeeding also have increased energy needs compared with non-pregnant and non-lactating women. Indeed, energy requirements increase by 640 kcal/day during the first six months postpartum among women who breastfeed exclusively. Although infant demand is a key condition for stimulating milk production, better diets can also improve the lactation capacity of women who are undernourished.

80% of subjects were delivered between 37 to 42 week, while 17% of subjects had preterm delivery. Women who had lower dietary intake of fat and vitamin E had more more incidence of preterm birth. (7) Recommended weight gain in normal BMI mothers is 11.5 to 16 kg, while in underweight mother recommended weight gain is 12.5 to 18 kg. in our study Majority (53%) of subjects had weight gain of 6 to 10 kg, which was in lower side of recommended weight gain.(8). 65% of subjects had various antenatal morbidity, among them anemia(22%), gestational hypertension, abruptio placenta, gestational diabetes, placenta previa. Majority of anemic mothers had iron and folate deficiency which was corrected by parenteral iron and blood transfusion.

Majority(74%) of subjects had spontaneous labour while 26% of subjects had induction. 25% of subjects had various intranatal morbidity, 9% Of subjects had perineal tear, while 7% of subjects had developed fetal distress, 7% of subjects had MSL Intranatally.13% of subjects had various postnatal morbidity, 4% of subjects had PPH, 2% of subjects had CS wound infection, 3% of subjects had episiotomy wound infection and 4% of subjects had lactational failure. In underweight mothers there is less plasm volume and blood volume expansion, and more associated with PPH. 17% of subjects required blood transfusion. Majority of subjects(11%) of required blood transfusion due to chronic anemia,4% subjects required blood transfusion due to PPH, 2% required due to antepartum hemorrhage. According to NFHS 5 survey , in private hospital ceserean ate is higher as 47.4% while in government hospital 14.3%. based on WHO systematic review increase in Cs rate up to 10- 15% at the population level are associated with decrease in maternal neonatal, infant mortality. In our study , 71% of subjects had normal vaginal delivery, while 29% of subjects had went under ceserean section. 10% of subjects required blood transfusion in 3rd trimester, while 7% of subjects required blood transfusion post natally.48% of subjects required parenteral iron.

CONCLUSION

Women's nutrition(specially during pregnancy and breast feeding) is also important determinant of child's growth , health and development during 1st (1000) days of life. In Gujarat prevalence of undernutrition in female is 25% as per NFHS 5 survey.To decrease undernutrition, government shall focus to improve female literacy rate and on nutritional awareness program for reproductive age women in rural, urban population and low socioeconomic class.To decrease maternal morbidity associated with undernutrition, a) We shall focus on periconceptional, antenatal and postnatal focused dietary counselling. b) Early registration in 1sttrimester , >-4 antenatal visits at a center where obstetrician and dietician are available.

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