Thin Women and Pregnancy Outcome

Zafari Mandana*, **Moslemi Leila, Abbasi Elieh, Tahmaseby Homeira**

midwifery Department, Islamic Azad University Sari branch, Sari, Iran

Abstract   Our aim was to determine the pregnancy outcome in low BMI women. This cohort study was done on pregnant women that Refer in prenatal care centre. We select women who had low BMI and thin randomly. And compare pregnancy outcome in three level weight gains with normal BMI women. Incidence of the pregnancy outcome: preeclampsia , IUGR, caesarean pre term delivery, fetal outcome: fetal distress, low score of Agar increase in women with low level of weight gain.(α=0.05)women with low BMI Before pregnancy should get higher weight in pregnancy, if they pregnant with low BMI should consider as a high risk pregnant women.

Keywords   BMI, Pregnancy Outcome , Thin, Weight Gain

1. Introduction

Body mass index (BMI) has an opposite effect on reproduction. Obesity women have higher incidence of Abnormal uterine Bleeding (AUB), Because the secretion of Gonadotropin releasing Hormone , sex Hormone binding globulin , ovarian and Adrenal androgen , luteinizing hormone change. High or low level of BMI associated with reduced probability of pregnancy (1). Definition of overweight, obesity and under weight is different.

The research's showed relation between BMI of mother and pregnancy outcome such as preterm delivery, low birth weight, prenatal loss. The effect of maternal under weight on pregnancy outcome is less clear (2). on the other hand poor nutrition , low BMI , poor weight gain during pregnancy and low level Haemoglobin concentration are risk factors for these outcome. Low birth weight (LBW) defined as birth weight less than 2500 grams. And it is import and factor that can predict infant mortality and morbidity (3) .

In developed countries an interaction between pregnancy weight and weight gain during pregnancy has been reported. Under weight women with weight gain 12kg, overweight women with weight gain 6-11kg will have the best pregnancy out come (4).

Our Aim of this study is to determine the Relation between pregnancies out come in different level of weight gain in underweight women.

2. Methods

This cohort study was done on pregnant women who that

* Corresponding author:
mandanazafari@iausari.ac.ir (Zafari Mandana.)
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refer in health centre of Medical university of Mazandaran (north of Iran). Sampling Method was Random Sequential. Individual information Such as Age, educational level, Blood group, the Stamata date of delivery. Was noted in first visit. All of 300 pregnant women sited in five groups. First group: BMI < 19.8, second group BMI between 19.8 to 26.Third group BMI between 26 to 29, fourth group BMI between 29 to 35 and other group BMI more than 35.In first and second groups amount of weight gain divided in tree level: first level: weight gain less than 8kg, second level: weight gain Between 8 to 15.9, and third level: weight gain more than 16kg.In both group Age, Number of children, Number of cigarette use determine. We determine, If, there any correlation between pregnancy out comes, such as, low birth weight, preterm labour. Score of apgar, prenatal loss, small for gestational Age, fetal distress. In each level; of weight gain in two groups of BMI.

3. Results

In This study among 300 pregnant women that refer in Medical centre for receiving prenatal care, 41(13.7%) had BMI < 19.8, 33(17%) BMI 19.8-26, 47(15.7%) BMI 26-29, 110 (36.7%) BMI 29-35 and 69(23%) BMI > 35.

14(34.1%) in first group, 9(27.3%) in second group, 7(14.9%) in third group and 15(13.6%) in fourth group, 12(17.4%) in the end group had weight gain less than 8kg.

21(51.2%), 16(48.5%), 25(53.2%), 57(51.8%), 25(36.2%) in each group (sequential) had weight gain 8-15.9 kg.6(14.6%), 8(24.2%), 15(31.9%), 38(34.5%) and 32(46.4%) had weight gain more than 16kg. We can say the women with BMI >35 had weight gain more than 16kg and with BMI <20.51.2% had weight gain 8-16kg.also x^2 test showed amount of weight gain collated with the level of BMI.(p=0.11)Also there were meaning full Relation between BMI and Age (p=0.053), parity (p=0.803), use of cigarette (p=0.545).

Table 1. Relation between low BMI , degree of weight gain during pregnancy with pregnancy outcomes

Degree of weight gain	Pregnancy outcomes	BMI <19.8	BMI 19.8-26
Weight gain less than 8kg	Preeclampsia	0.007	0.003
	Large for gestational Age	0.000	0.000
	Small for gestational Age	0.000	0.000
	Caesarean section	0.032	0.379
	Preterm labour delivery	0.002	0.025
	Fetal distress	0.049	0.076
	Agar score	0.335	0.399
Weight gain 8-16kg	Preeclampsia	0.000	0.000
	Large for gestational Age	0.000	0.000
	Small for gestational Age	0.000	0.312
	Caesarean section	0.035	0.579
	Preterm labour delivery	0.004	0.213
	Fetal distress	0.337	0.870
	Agar score	0.368	0.467
Weight gain more than 16kg	Preeclampsia	0.000	0.000
	Large for gestational Age	0.000	0.000
	Small for gestational Age	0.000	0.001
	Caesarean section	0.032	0.578
	Preterm labour delivery	0.013	0.343
	Fetal distress	0.120	0.218
	Agar score	0.314	0.365

In women with BMI < 19.8 and weight gain less than 8kg , there were meaning full Relation with preeclampsia ($p=0.001$, $r^2 = 0.047$) , large for gestational Age ($p=0.000$, $r^2 = 0.072$) , small for gestational Age ($p=0.000$, $r^2 = 0.249$) , use of forceps ($p=0.002$, $r^2 = 0.041$) , preterm lab our delivery($p=0.04$, $r^2 = 0.020$) , Rate of caesarean section ($p=0.032$, $r^2 = 0.023$).

On the other hand These Relation was not meaning full with the Apparel score ($p=0.335$, $r^2 = 0.007$). In women with BMI 19.8-26 and weight gain less than 8kg , there were meaning full Relation with preeclampsia($p=0.003$, $r^2 = 0.037$) , large for gestational Age ($p= 0.000$, $r^2 0.083$) , small for gestational Age0 ($p=0.000$, $r^2 = 0.086$) , preterm labour delivery ($p=0.025$, $r^2 = 0.024$).but the Relation with the Rate of caesarean section ($p=0.579$, $r^2 =0.004$), fetal distress ($p=0.076$, $r^2 = 0.017$), Agar score ($p=0.399$, $r^2 -0.006$) were not meaning full.

In women with BMI 19.8-26 and weight gain 8-16kg, the meaning full relation found with preeclampsia ($p=0.000$, $r^2=0.065$), large for gestational Age ($p=0.000$, $r^2 = 0.161$).

This Relation were not meaning full with small for gestational Age ($p=0.372$, $r^2=0.008$), Rate of caesarean section ($p=0.579$, $r^2=0.004$), preterm labour delivery ($p=0.213$, $r^2=0.010$), fetal distress ($p=0.870$, $r^2=0.001$) and Agars score ($p=0.467$, $r^2=0.005$).

In women with BMI <19.8 and weight gain 8-16kg , the meaning full relation were found with preeclampsia ($p=0.000$, $r^2 =0.078$) , large for Gestational Age($p=0.000$, $r^2 = 0.752$) , small for gestational Age ($p=0.000$, $r^2=0.206$) , Rate of caesarean section ($p=0.035$,$r^2=0.022$) , preterm lab our delivery ($p=0.004$, $r^2=0.036$).

But this Relation were not meaning full with fetal distress ($p=0.337$, $r^2 =0.007$) and Agar score ($p=0.368$, $r^2 = 0.007$).

In women with BMI <19.8 with weight gain more than 16kg , the Relation with preeclampsia ($p=0.000$, $r^2 =0.137$) , large for gestational Age ($p=0.000$, $r^2 = 0.275$) , small for gestational Age ($p=0.000$, $r^2 0.212$) , Rate of caesarean section ($p=0.03$, $r^2 0.023$) , preterm labour delivery ($p=013$, $r^2 = 0.029$) were meaning full. But this Relation were not meaning full with fetal distress ($p=0.120$, $r^2=0.014$) and Agar score ($p=0.314$, $r^2=0.008$).

In women with BMI 19.8-26 with weight gain more than 16kg , the meaning full Relation were found with preeclampsia ($p=0.000$,$r^2=0.133$), large for Gestational age ($p=0.000$, $r^2=0.29$) Small for Gestational Age ($p=0.001$, $r^2=0.046$).But this Relation were not meaning full with preterm labour delivery ($p=0.343$, $r^2=0.007$), fetal distress ($p=0.218$, $r^2=0.01$), Agar score ($p=0.365$, $r^2 0.007$).(table 1)

4. Discussion

This study has showed that some opposite outcomes of pregnancy are associated with low BMI found that thin women (BMI <19.8) world have at risk for small for Gestational Age and preterm lab our delivery. Our analyses confirm previous Research.

One study reported, that pregnant women with low BMI had low volume , lower cardiac output , increase in vascular disease , lower rennin -aldstrone response , compare with normal weight pregnant women .we Think inadequate maternal hemodynamic ad hutments can associated with utero placental insufficiency and , in can end to small for gestational Age (5).

Most authors report a higher Incidence of induction of lab our in fatty women than in women with normal BMI. Each 1-unit in BMI before pregnancy can increase the risk of caesarean delivery by 7% (6).We demonstrate the risk of

preeclampsia is positively associated with high BMI, It was similar to the study of seabird metal (7), Athukorala (8), Gregory metal (9), Meenakshivm etal (10), curt miller metal (11).

On the other hand T.T.Lao, believe the Relation of pre eclampsia and impaired glucose to learn (It) wasn't significant. (12)

Previous studies have shown that pregnancy weight gain within the ranges recommended by IoM is associated with the best outcome for both mother and in faints. On the contrary, some studies, that retrospectively assessed the senility and specificity of this indictor, concluded that maternal weight gain alone is neither a sensitive nor a specific predictor of poor pregnancy out come. (13)

Some studies believe the prevalence of obesity in infertile women is high. And it has linked over weight and obesity to low pregnancy rate. (14) However, we didn't examine this Relation despite all of Bad Results of High BMI, Higher maternal weight before pregnancy protects against the delivery of a small for gestational age infant. (15)

More intervention studies are needed to determine if these complications can be prevented with intervention to diet or physical activity (16) Adequate Nutrition is important for pregnant women and women will have pregnancy. Although most attention should focus on adequacy intake of folic Acid during the per icon sectional period, obesity prevention and management is another as peck of enough Nutrition. Women who are pregnant or become pregnant should be cancelled to intake folic Acid, Smoking cessation and avoidance ethanol use. (17)

5. Conclusions

We can say, pregnancy with low BMI must be consider as a high risk pregnancy .it can associated with high incidence of fetal distress and low score of Agar . when women with low BMI become pregnant ,they should get higher weight in this period.

ACKNOLEGEMENTS

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