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RISK FACTORS THAT INCREASE MATERNAL MORBIDITY IN PREGNANT WOMEN BETWEEN 30 TO 34 YEARS OF AGE.

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ABSTRACT

INTRODUCTION. According to the World Health Organization (WHO), the prevalence of obesity worldwide has nearly tripled since 1975. According to 2016 data, 39% of the global adult population was overweight, and 13% was obese. A recent study, including 20 European countries, concluded that 53% of adults were overweight or obese. Increase in overweight and obesity among women of childbearing age (15 to 44 years). Overweight and obesity during pregnancy are associated with many complications, including increased risk of gestational hypertension, preeclampsia, gestational diabetes mellitus, cesarean delivery, preterm delivery, large-for-gestational-age infants, and stillbirths. Additionally, gestational weight gain is associated with diabetes, pregnancy-induced hypertension, cesarean delivery, postpartum weight retention, macrosomia, and childhood obesity.

MATERIAL AND METHOD. An observational, cross-sectional study in 15 pregnant women in 2022 at the Playa del Carmen General Hospital.

RESULTS. Were completed variables of interest in prenatal control.

DISCUSSION. The short interval between pregnancies is a public health problem because it leads to adverse perinatal outcomes such as postpartum hemorrhage, anemia, preterm delivery, low birth weight, and perinatal deaths. Ineffective or no contraception after one pregnancy contributes to a subsequent pregnancy.

CONCLUSIONS. It is essential to detect gestational Diabetes mellitus as well as gestational hypertension, and prenatal control should be improved because although pregnant women report carrying it out, it is not reflected in cases of preeclampsia that remains high in pregnant women.

Keywords: pregnancy; maternal age; obesity; gestational age; risk factors; cesarean section.

INTRODUCTION

The incidence of gestational diabetes mellitus (GDM) is high when superimposed overweight and obesity prior to pregnancy, as well as the increase in gestational BMI from conception to 15-20 weeks of gestation. If we consider advanced age, they correlate with a greater risk of GDM, among other complications. It showed that between 17 and 21% of pregnant women

were overweight or obese, with an overall mean age at pregnancy of 31 years. However, there are recent data on the incidence of GDM. Previous studies have shown that BMI correlated with an increased risk of hypertension, stroke, and cardiovascular disease and that hypertension was associated with diabetes. GDM plays an essential role in the pathogenesis of diabetes: approximately half of the mothers with GDM will develop diabetes within ten years, making GDM one of the strongest predictors of diabetes. However, age differences in the association between obesity and GDM remain unclear (1).

It was known that GDM could result in diabetic fetopathy with an increased risk for cesarean sections and postnatal complications. In addition, there is an increased risk of fetal death before the clinical onset of diabetes. There is evidence that slightly elevated glucose, even below diagnostic levels for diabetes and IGT, could be harmful and increase the risk of babies with higher gestational age (2).

According to the World Health Organization (WHO), the prevalence of obesity worldwide has nearly tripled since 1975. According to data from 2016, 39% of the world's adult population was overweight, and 13% was obese. (3). A recent study, including 20 European countries, concluded that 53% of adults were overweight or obese. Increase in overweight and obesity among women of childbearing age (15 to 44 years). Overweight and obesity during pregnancy are associated with many complications, including increased risk of gestational hypertension, preeclampsia, gestational diabetes mellitus, cesarean delivery, preterm delivery (4), considerable labor for gestational infants, and stillbirth. Furthermore, gestational weight gain is associated with diabetes, pregnancy-induced hypertension, cesarean delivery, postpartum weight retention, macrosomia, and childhood obesity (5).

MATERIAL AND METHOD

A study was carried out on 14 pregnant women between the ages of 30 and 34 who were treated during the year 2022 in the Gynecology and Obstetrics Service to determine the maternal risk factors in this age group. Twenty variables were considered, and descriptive statistics were used with measures of central tendency, measures of dispersion, and percentages for their statistical analysis.

RESULTS

Of the 20 variables considered, prenatal control stands out with 73% compliance, the number of cesarean sections performed with 67%, and preeclampsia events with 53%, which are high numbers for compliance with prenatal control in the hospital (Table 1).

Table 1. Variables were considered to analyze 15 pregnant women between 30 and 34.

Variable	X	S	Num.	%
Age	32.1	1.2		
Gestations	2.6	0.9		
Intergenic period	6.07	3.2		
In-hospital days	5.0	2.9		
Birth control			11	73
Caesarean sections performed			10	67
Preeclampsia			8	53
Obesity			7	47
No family planning			6	40
Previous caesarean sections			6	40
Abortions previous			5	33
Placental abruption			3	20
Instrumental uterine curettage			3	20
Hypovolemic shock			3	20
Exploratory laparotomy			3	20
Eclampsia			2	13
DM2			1	7
Abortions			1	7
Uterine atony			1	7
Hellp's syndrome			1	7

DISCUSSION

Nutritional deficiencies during pregnancy can have severe consequences for the health of the (unborn) child [6-7]. Iron deficiency, for example, leads to anemia associated with impaired fetal development, preterm delivery, and a low birth rate. Another well-known example is folate deficiency, associated with anemia and neural tube defects, which can lead to infant mortality and severe disabilities. Therefore, proper nutrition is vital during pregnancy and before conception. Previous research in the US has indicated that a significant number of pregnant women do not meet multiple vitamin and mineral recommendations. Pregnant women can follow the dietary guidelines for the general female population. However, some foods and nutrients have specific needs for body maintenance, tissue growth, fetal development, or food safety.

Examples include an increased requirement for folic acid and iodine and, on the other hand, the prevention of excessive intake of vitamin A and the advice not to consume alcohol. Due to these differences, there are specific dietary recommendations and reference values for pregnant women. For example, the 2012 Nordic Nutrition Recommendations and the 2020–2025 Dietary Guidelines for Americans include specific recommendations for pregnant women (8-12).

Hypertensive disorders of pregnancy can occur among women during pregnancy and are responsible for most perinatal and fetal mortality. 1, 2 the prevalence of hypertensive disorders during pregnancy is high (17%) and may negatively affect the quality of life during and after pregnancy. Research shows a prevalence of hypertension between 2 and 9% (13, 14).

Physical activity is any bodily movement produced by skeletal muscles that requires energy expenditure and is an essential element of a healthy lifestyle (15). A growing body of evidence suggests that regular prenatal exercise has health benefits for both mother and fetus (16). Maternal benefits of being active during pregnancy include gestational weight control, improved cardiovascular function (17), relief of low back and pelvic pain, shorter delivery time (18), less likelihood of cesarean section (19), and even to some extent, improved psychological well-being (20, 21).

The short interval between pregnancies is a public health problem because it leads to adverse perinatal outcomes such as postpartum hemorrhage, anemia, preterm delivery, low birth weight, and perinatal deaths. While understanding the factors contributing to the short interpregnancy interval is essential to reduce the risk of these adverse outcomes, information

on the factors in the urban setting is lacking. Contraceptive use and duration of lactation need to be improved to maximize the interval between pregnancies (22).

Ineffective or no contraception after one pregnancy contributes to a subsequent pregnancy. About 20% of the most recent pregnancies that ended in a live birth were unplanned at the time of conception. 37% of women reported not using contraception before their pregnancies, which decreased to 24% after pregnancies. About 54% of women who reported not using contraception before pregnancy used modern contraceptives. After pregnancy, the rate was higher among women who experienced an unwanted pregnancy (73%), mistimed (59%), and wanted (53%) pregnancy. The experience of a mistimed pregnancy was associated with a greater likelihood of not switching contraceptive methods (OR, 1.84, 95% CI: 1.41–2.39) and switching to less effective methods of contraception (OR, 1.58, 95% CI 1.10–2.26) than switching to more effective contraceptives. However, unintended pregnancy was not associated with any significant change in contraceptive use from before to after pregnancy. The experience of unwanted pregnancy did not change women's contraceptive use patterns, indicating the risk of repeat unwanted pregnancies and associated adverse consequences, including maternal and infant morbidity and mortality (23).

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The experience of unwanted pregnancy did not change women's contraceptive use patterns, indicating the risk of repeat unwanted pregnancies and associated adverse consequences, including maternal and infant morbidity and mortality (23).

CONCLUSIONS.

It is essential to detect gestational Diabetes mellitus as well as gestational hypertension, and prenatal control should be improved because although pregnant women report carrying it out, it is not reflected in cases of preeclampsia that remains high in pregnant women.

REFERENCES

- [1] Li G, Wei T, Ni W, Zhang A, Zhang J, Xing Y and Xing Q. Incidence and Risk Factors of Gestational Diabetes Mellitus: A Prospective Cohort Study in Qingdao, China. *Front. Endocrinol*, 11:636 ;2020. Doi: 10.3389/fendo.2020.00636
- [2] Moll U, Olsson H, Landin-Olsson M. Women with a predisposition for diabetes have an increased risk of pregnancy complications, especially in combination with pregestational overweight. *BMC Pregnancy Childb*, 20:74 ;2020 <https://doi.org/10.1186/s-020-128845-2741>
- [3] World Health Organization. Obesity and Overweight. World Health Organization. Fact Sheets 2020. <https://doi.org/10.1186/s-020-128845-2741>
- [4] Voerman E, Santos S, Inskip H et al. Association of gestational weight gain with adverse maternal and infant outcomes. *JAMA*, .15-321:1702 ;2019
- [5] Escanuela Sánchez T, Mamey S, O'Connor C, et al. Facilitators and barriers influencing weight Management behaviors during pregnancy: a meta-synthesis of qualitative research. *BMC Pregnancy Childb*, 22:682 ;2022 <https://doi.org/10.1186/s-022-1288404929-z>
- [6] Tuncalp Ö, Rogers LM, Lawrie TA, et al. WHO recommendations on antenatal nutrition: An update on multiple micronutrient supplements. *BMJ Glob Health*, 5 ;2020. e.003375
- [7] Jouanne M, Oddoux S, Noël A, Voisin-Chiret AS. Nutrient Requirements during Pregnancy and Lactation. *Nutrients*, .13:692 ;2021
- [8] ter Borg S, Koopman N, Verkaik-Kloosterman J. An Evaluation of Food and Nutrient Intake among Pregnant Women in the Netherlands: A Systematic Review. *Nutrients*, 3071 :15 ;2023. <https://doi.org/10.3390/nu15133071>

- [9] Chen TL, Cheng SF, Gau ML, Lin LL. Processed Dietary Patterns during Pregnancy Are Associated with Low Birth Weight at Term among Women of Advanced and Non-Advanced Age. *Nutrients*, 3429 :14 ;2022. <https://doi.org/10.3390/nu14163429>
- [10] Papandreou D, Mantzourou M, Tyrovolas S, et al. Pre-Pregnancy Excess Weight Association with Maternal Sociodemographic, Anthropometric and Lifestyle Factors and Maternal Perinatal Outcomes. *Nutrients*, 14:3810 ;2022. <https://doi.org/10.3390/nu14183810>
- [11] Jankovic-Karasoulos T, Smith MD, Leemaqz S, et al. Elevated Maternal Folate Status and Changes in Maternal Prolactin, Placental Lactogen, and Placental Growth Hormone Following Folic Acid Food Fortification: Evidence from Two Prospective Pregnancy Cohorts. *Nutrients*, 15:1553 ;2023. <https://doi.org/10.3390/nu15071553>
- [12] Zhao D, Zhang C, Ma J, et al. Risk factors for iron deficiency and iron deficiency anemia in pregnant women from plateau region and their impact on pregnancy outcome. *Am J Transl Res*, .53-4146:(6)14 ;2022
- [13] Khedagi AM, Bello NA. Hypertensive disorders of pregnancy. *Cardiol Clin*, -39:77 ;2021 .90
- [14] Kresht J, Hatem G, Lahoud N, et al. Development and validation of a short tool to assess the awareness of hypertensive disorders of pregnancy: a cross-sectional study among pregnant women in Lebanon. *Am J Obstet Gynecol Glob Rep*, 2023; XX:x.ex–x.ex.
- [15] Birsner ML, Gyamfi-Bannerman C. Practice CoO. Physical activity and exercise during pregnancy and postpartum: ACOG committee opinion, number 804. *Obstet Gynecol*. 4)135 ;2020):e88–178. <https://doi.org/10.1097/00006255-202004000-00000>
- [16] Bull FC, Al-Ansari SS, Biddle S, et al. World Health Organization 2020 guidelines on physical activity and sedentary behavior. *Br J Sports Med*, 62-1451:(24)54 ;2020. <https://doi.org/10.1136/bjsports-2020-102955>
- [17] Morales-Suarez-Varela M, Clemente-Bosch E, Peraita-Costa I, et al. Maternal physical activity during pregnancy and the effect on the mother and newborn: a systematic review. *J Phys Act Health*. 47-130:(1)18 ;2021. <https://doi.org/10.1123/jpah.2019-0348>
- [18] Rodríguez-Blanque R, Sánchez-García JC, Sánchez-López AM, Aguilar-Cordero MJ. Physical activity during pregnancy and its influence on delivery time: a randomized clinical trial. *Peer J*, 7 ;2019:e6370. <https://doi.org/10.7717/peerj.6370>
- [19] Russo LM, Harvey MW, Pekow P, Chasan-Taber L. Physical activity and risk of cesarean delivery in Hispanic women. *J Phys Act Health*, 24-116:(2)16 ;2019. <https://doi.org/10.1123/jpah.2018-0072>

- [20] Coll CVN, Dominguez MR, Stein A, et al. Efficacy of regular exercise during pregnancy on the prevention of postpartum depression: the PAMELA randomized clinical trial. *JAMA Netw Open*, 1)2 ;2019):e186861.[https://doi. Org/10.1001/jama network kopen, .6861 .2018](https://doi.org/10.1001/jama-network-open.186861)
- [21] Zhou T, Lin Y, Xu F, et al. Factors influencing physical inactivity status among Chinese pregnant women: a cross-sectional study. *BMC Public Health*, 22:2310 ;2022. [https://doi.org/10.1186/s7-14757-022-12889](https://doi.org/10.1186/s14757-022-12889)
- [22] Jena BH, Biks GA, Gete YK, Gelaye KA. Duration of inter-pregnancy interval and its predictors among pregnant women in urban South Ethiopia: Cox gamma shared frailty modeling. *PLoS ONE*, 8)17 ;2022): e0271967. <https://doi.org/10.1371/journal.pone.0271967>
- [23] Khan N, Islam M. Women's experience of unintended pregnancy and changes in contraceptive methods: evidence from a nationally representative survey. *Reproductive Health*, 19:187 ;2022. <https://doi.org/10.1186/s01492-022-12978-w>