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Covid 19 and Pregnancy: Aspects Related to the Nutritional Level in Pregnant Women

Caridad ICAM[1]*, Antolina SGM[2], Idania PS[2], Olivia RRA[2] and Elena BPM[3]

[1]Instructor Professor, Faculty of Medical Sciences of Artemisa, Cuba
[2]Assistant Professor of Medical Sciences Branch "Piti Fajardo" of San Cristóbal, Cuba
[3]Professor, Branch of Medical Sciences "Piti Fajardo" of San Cristóbal, Cuba

***Corresponding author:** Capó Alonso María Caridad I, Instructor Professor, Faculty of Medical Sciences of Artemisa, Cuba, Email: mariacapo@infomed.sld.cu

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Abstract

Introduction: Malnutrition is a health problem worldwide. The implications of this situation on maternal and child health are very serious because insufficient weight gain during pregnancy and anemia bring about Low Birth Weight, and it means an increase of morbimortality in the first year of life.

Objective: To reflect basic aspects of nutrition and pregnancy for their correct handling in the health primary care.

Material and Methods: A bibliographical revision was carried out by means of the consultation of databases, as MEDLINE, IBECS, Scielo, Who with the use of describers like nutrition, maternal-infantile health, anemia, under weight.

Conclusion: Concrete data of great importance on the nutrition of the pregnant and their influence in the health of the same ones and the product of the gestation were given.

Keywords: Nutrition; Maternal And Child Health; Anemia; Low Weight Newborn

Abbreviations: WHO: World Health Organization; FAO: Food and Agriculture Organization of the United Nations; BMI: Body Mass Index.

Introduction

Women of reproductive age may constitute a population subgroup vulnerable to infection by the SARS CoV-2 virus that causes Covid-19. Although it is true that until now young people have shown low rates of viral infection, and low mortality, pregnancy and childbirth face old and new challenges. Covid-19 has disrupted the medical care of pregnant women and their nutritional relationship, as well as the customs and social practices that surround them. Arguing the role of nutrition and feeding of pregnant women with infection by the SARS CoV-2 virus that causes Covid-19.

Method: An information search was carried out in the PubMed, ScienceDirect and SciELO databases. The terms nutrition, pregnancy was used. covid 19. in, books and basic texts specialized on the subject, which totaled references complemented the bibliographic search with articles [1].

The new coronavirus SARS-CoV-2, which causes the disease known as COVID-19, continues to spread rapidly throughout the world. The World Health Organization has called COVID-19 a pandemic due to the increasing number of cases outside of China. It is a respiratory virus that can be transmitted quite easily, whose symptoms are fever, headache, fatigue, accompanied by dry and dry cough, and in

many cases, dyspnea. The numbers of infections and deaths continue to rise. The WHO has called COVID-19 a pandemic due to the increasing number of cases outside of China. It is a respiratory virus that can be transmitted quite easily, whose symptoms are fever, headache, fatigue, accompanied by a dry cough and in many cases dyspnea [2].

Women of reproductive age may constitute a population subgroup vulnerable to infection by the SARS CoV-2 virus that causes Covid-19. Although it is true that until now young people have shown low rates of viral infection and low lethality, it is no less true that the presence of nutritional disorders at the time of pregnancy detection, and during pregnancy itself, can place women at increased risk of viral infection at any time during pregnancy [2].

Today there is a new pathogen that causes respiratory conditions that is Covid-19, in pregnant women who test positive for this pathogen, symptoms such as a cold, sore throat, congestion or runny nose, chills, pain can manifest. muscle pain, headache, loss of sense of taste or smell, nausea or vomiting, diarrhea, tiredness, it is recommended that in the presence of any of these symptoms (7) Currently, nutritional-energy malnutrition is the health problemlargest in developing or emerging countries.

Organisms International organizations such as the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO), place it at figures that exceed 825 million inhabitants (of which, 792 million belong to the so-called Third World), of which more than half (500 million) are children (1.2). The implications of this situation for maternal and child health are very serious. The diet during pregnancy and lactation must be balanced and meet the energy recommendations. Attention should be paid to dietary sources of iron and calcium. The increased nutritional needs during pregnancy and lactation make it necessary to supplement vitamins and minerals, especially folic acid, iron and calcium to provide adequate levels of these, due to the difficulty of ingesting them during the diet. The quality of this affects the previous nutritional status of the pregnant woman and constitutes a factor that affects the health of the pregnant woman and the child, so insufficient weight gain at the end of pregnancy leads to a higher incidence of low birth weight [3-7].

Studies carried out in the Canary Islands, in 2009, as well as those of Rocha in Vicosa, Brazil, in 2002, the works of Villavicencio, in the State of Cojedes, and those of Peña in Valencia, both in Venezuela in 2003[3,8-10]and in Cuba, those of Villares Álvarez, in Cienfuegos, in 2006, among others Álvarez VI, et al. [11,12], agree that iron deficiency is the most common nutritional deficiency during pregnancy and the most frequent cause of anemia, being related to a higher risk of prematurity, low birth weight and increased perinatal morbidity and mortality [13].

Objective

Reflect behavior of Covid 19 and basic aspects of nutrition in pregnant women.

Methods

Design: Systematic review Data source: Scielo, IBECS, MEDLINE, GoogleScholar, Cochrane, Who. A manual and digital search of specialized journals on the subject was carried out and, subsequently, they were cited in the bibliographical references. Study selection and analysis: Published studies were reviewed. Researches of diverse design were included; original papers and review articles by prestigious authors on the subject.

Development

Women of reproductive age may constitute a population subgroup vulnerable to infection by the SARS CoV-2 virus that causes Covid-19. Although it is true that until now young people have shown low rates of viral infection and low lethality, it is no less true that the presence of nutritional disorders at the time of pregnancy detection, and during pregnancy itself, can place women at increased risk of viral infection at any time during pregnancy [2].

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Pregnancy with Covid-19 continues to be explored in the clinic, present in our society wreaking havoc, affecting globally and nationally. Generating an alarm when providing comprehensive care. This new disease makes health personnel generate new forms of care and protection [14-16].

Food, Nutrition and Diet Concepts

Food can be considered as the process by which the subject seeks in his environment, actively or passively, the food and nutritional chemical categories that he needs to satisfy the substantial energy requirements of his body [14].

Nutrition is a process of extraordinary biological complexity that refers to the distribution, use, transformation,

storage and/or elimination of nutrients in the body. It involves the cellular metabolic function and is not likely to be changed by educational interventions on the individual.

In turn, the diet is nothing more than the set of chemical, food and nutritional categories, which can be ingested by the individual with the purpose of satisfying energetic and substantial needs. For a diet to be balanced or normal, it must meet four fundamental requirements:

It must be appropriate, that is, adjusted to the stage of life, sex and functional status of the subject. Be sufficient, which is to say provide the amounts of energy and nutrients that the cells of the different tissues and organs of the body may need.

- **Varied**: The diet must include food chemical categories that come from different sources (animal and vegetable) and of a different nature, assuring as a whole the energetic and substantial demands of the cells at the tissue and organic level.

- **Balanced:** This is the most difficult requirement to fulfill and means that each food and nutritional component must be present in the diet ingested in certain absolute and relative amounts, thereby avoiding stress on any metabolic pathway at the tissue-organic level.

- **Food frequency:** It is proposed that the amounts of food and nutrients to be ingested should be done with a certain frequency, each intake corresponding to a certain percentage of the person's total energy needs.

Thus, it is proposed that a breakfast should be made, the most important of all, which provides 20% of the energy requirements; a morning snack (about 2 hours after breakfast), which provides 10% of the total energy required; lunch (2 or 3 hours later), which provides 30% of the total energy need; an afternoon snack (3 hours after lunch) that provides about 10% of energy requirements; lunch (about 2 hours after the afternoon snack), which provides about 20% of the individual's total energy needs and, finally, dinner (about 2 or 3 hours after the meal), which provides about 10% of energy requirements.

Nutrition in Pregnancy

The Maternal-Infant Program in our country aims to detect all possible risk factors that may favor the birth of a low birth weight newborn, with maternal malnutrition being one of the aspects in which work must still be done to reduce infant morbidity and mortality. This is also associated with other factors such as early ages at which pregnancy occurs, the frequency of anemia, toxic habits and vaginal infection, among others [8].

The recommended mean weight gain for healthy primiparous women, who eat without restriction, should be 12.5-12.8 kg throughout pregnancy (5.15).

In our country, the validation of the weight at the beginning of pregnancy must be carried out before 13 weeks of gestation and, at present, the most precise indicator for nutritional evaluation, recommended throughout the world as a reference, is the calculation of the weight index. body mass (BMI=weight (kg)/height (m^2)), proposing the following categories for this evaluation, according to Cuban tables used by the National Institute of Food Hygiene of high specificity and validated with the weight of the newborn: 16

Category BMI Total Minimum Gain
recommended (kg)
Low Weight _____=18.8 _____14.2
Normal Weight_____>18.8 to <25.6 __12.8
Overweight _____=25.6 to <28.6___7.0
Obese _____= 28.6 _____5.8

For women with a normal body mass index at uptake, a gain of approximately 0.4kg per week is recommended in the second and third trimesters of pregnancy, for low weight it should be 0.5kg per week and for overweight of 0.3kg per week.

Different studies demonstrate the important effect of low birth weight andprematurity on infant morbidity and mortality in developing countries [5-7], as well as its close relationship with poor nutrition in pregnant women.

- **Proteins:** They have a reparative function. In Cuba, the daily intake of protein for the pregnant and lactating mother should correspond to 12% of the recommended energy intake.

- **Fats**: Fats are of great importance due to their high energy density and participate in the synthesis of prostaglandins, prostacyclins among others. 15 to 30% of the recommended energy is required in the diet.

- **Carbohydrates:** Their main function is to provide energy. Their supply depends on the values set for the total energy intake of proteins and carbohydrates, ranging from 60% of the recommended total energy.5

- **Vitamins and Minerals:** Vitamins and minerals are essential compounds for the growth, development and maintenance of the human body, but they need to be acquired through food since it does not have the ability to synthesize them. Plasma concentrations of many

vitamins and minerals decrease during pregnancy, possibly due to hemodilution; others are sensitive to heat, light, air and are eliminated through sweat. The most frequent deficits are of Vitamin A, iron phosphate. (5.14)

- **Vitamin A**: It is essential for normal vision, growth, differentiation of body tissues and the integrity of the immune system. Its deficit is associated with premature births, intrauterine growth retardation, as well as low birth weight. born.2,9 The daily requirements are: 6,000U/day. You can find the foods of animal origin (liver, fish liver oils, eggs and dairy products); certain deep yellow vegetables (carrots), deep green leaves (spinach and lettuce), and yellow fruits (fruit bomb and mango)

Folic acid is vitally important for cell division and growth, so its deficiency is associated with low birth weight, premature placental abruption, and neural tube defects. Rich sources of this are liver, meat, eggs, legumes, whole grains, root vegetables (potato, pumpkin, sweet potato), vegetables (okra, watercress, turnip, peppers, tomatoes) and various fruits (melon, banana and citrus). It is almost completely destroyed during cooking. 200-300 mg/day are recommended during pregnancy and 100-200 mg/day during lactation.

- **Iron:** At present, there is sufficient evidence linking the iron deficiency anemia at the beginning of pregnancy with prematurity and low birth weight, the most frequent cause of neonatal morbidity and mortality [11,12,16].

Daily requirements are relatively low during pregnancy, around 1000 mg; however, only 0.8mg/day during the 1st. trimester and in the rest of pregnancy it can reach 6.3mg/day.

The fundamental sources of heme iron (with absorption between 20-30%), is found in high concentration in the liver, blood products, beef, vegetables, poultry and seafood. Non-heme is found in cereals, legumes and vegetables, it is only absorbed in less than 5%. The intake of Vitamin C, beef, poultry and fish are capable of increasing this absorption, but only if they are found in the same food. (5.16)

Iron deficiency is the most frequent and widespread nutritional deficiency in the world today. Just as it affects children and women in developing countries, it is the only deficient element that is significantly prevalent in developing countries industrialized [16,19].

Iron Deficiency Anemia

It represents 95% of anemias in pregnant women. Pregnancy and childbirth represent a drain of 1-1.3 g of iron that is extracted, fundamentally, from maternal reserves. If the interval between pregnancies is short, and if there are predisposing factors (such as heavy menses, poor diet, intestinal parasitism, weight loss diets, intolerance to oral iron, and others), they will start this one with depleted iron stores. Iron deficiency anemia is characterized by a decrease in the erythrocyte mass, produced by the lack or decrease in the bioavailability of iron.

Pregnancy increases iron needs to about 1 mg. Approximately 500 mg are needed for increased globular mass. The fetus has received a total of 250-300 mg of iron as hemoglobin and hepatic deposits, with 20-100 mg of iron corresponding to fetal blood in the placenta. Iron demands as pregnancy progresses will depend, among other causes, on fetal growth, especially in the last trimester.

Iron requirements in normal pregnancy Total requirement: 1000 mg is actively transferred to the fetus and placenta 300 mg and eliminated through excretion routes 200 mg. The iron required by the increase in erythrocyte mass (450ml) [16,20].

Some of the normal blood values in pregnancy are the following:

- Hemoglobin in the 1st. trimester: 120g/l and in the 3rd. quarter of 110g/l.
- Hematocrit of the 1st. trimester: 36-44% and in the 3rd. quarter of 33-42%.
- Serum iron 6.6-26 mmol/l.

For its prophylaxis, Prenatal is used: 1 daily tablet of 35 mg of elemental iron in the first trimester of pregnancy and 2 tablets during the rest of the pregnancy (from the 14th week of gestational age). The Institute of Nutrition and Food Hygiene (INHA) proposes for the pharmacological treatment of mild iron deficiency anemia, the oral dose of iron 60 mg daily elemental. If moderate or severe, the oral dose should be increased to 120 mg of elemental iron daily. In these cases, remember the daily administration of folic acid and Vitamin C. Doses greater than 120 mg of iron per day are not advisable because zinc and other nutrients compete with iron in the absorption process and a harmful imbalance can be created for the body. fetal development [16].

Conclusion

We can conclude that nutrition studies are of great importance in different stages of life and with priority in pregnant women. Proper management of their nutritional requirements, according to their nutritional status since they were recruited, as well as the use of a balanced diet, the prophylaxis of anemia with Prenatal tablets, and their correct treatment help to guarantee better health conditions

for pregnant women. and the product of gestation, proving essential to master all these aspects for its follow-up in Primary Care.

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