

Pregnant Women with Diabetes under the Novel COVID-19 Pneumonia Epidemic Home Protection and Diet and Exercise Management

Dan Li, Chunrong Pu, Cuilan Liu

Health Management Center of Deyang People's Hospital, Deyang, China

Email: 316381034@qq.com

How to cite this paper: Li, D., Pu, C.R. and Liu, C.L. (2023) Pregnant Women with Diabetes under the Novel COVID-19 Pneumonia Epidemic Home Protection and Diet and Exercise Management. *Advances in Infectious Diseases*, 13, 263-268.
<https://doi.org/10.4236/aid.2023.132024>

Received: May 5, 2023

Accepted: June 4, 2023

Published: June 7, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Under the epidemic situation of novel COVID-19 pneumonia, pregnant women belong to the susceptible population, and their physiological and psychological conditions are particularly worthy of attention. Diabetes patients during pregnancy may have a variety of complications, which can have a serious adverse impact on their own and fetal health. This article elaborates on home protection and diet and exercise guidance for pregnant women with diabetes in order to provide guidance for pregnant women with diabetes in a special period, and further prevent and control the pneumonia epidemic caused by novel COVID-19 infection in pregnant women.

Keywords

COVID-19, Gestational Diabetes Mellitus (GDM), Pregnant Women, Home Protection, Diet and Exercise Guide

1. Introduction

Since December 2019, novel COVID-19 pneumonia (COVID-19) has been found in Wuhan City, Hubei Province and throughout the country. The infection has spread rapidly and is now prevalent worldwide. Its pathogenicity and lethality have aroused widespread concern [1] [2]. On January 20, the National Health Commission of the People's Republic of China issued Announcement No. 1 [3] in 2020: to include novel COVID-19 pneumonia in the management of legal infectious disease B, and to take measures to prevent and control Class A infectious diseases. Although most patients with novel COVID-19 infection mainly show respiratory symptoms such as fever, dry cough, and dyspnea, some specific populations, such as pregnant women, are more likely to suffer from respiratory

distress syndrome, multiple organ failure and other critical diseases after novel COVID-19 infection, which may endanger the lives of pregnant women [4] [5].

Gestational diabetes (GDM) refers to diabetes that occurs during pregnancy with normal glucose metabolism before pregnancy. It is one of the common clinical complications of pregnancy [6]. In recent years, countries around the world reported that the incidence rate of GDM is about 1% - 14%, and China's incidence rate is 1% - 5%, and it is increasing year by year [7]. The current research shows [8] that age, obesity, race, poor reproductive history and diabetes family history are the main factors affecting pregnancy diabetes. GDM can have many adverse effects on pregnancy outcomes, increasing the risk of maternal and fetal complications in the short term (within 1 year postpartum) and long term (1 year or more postpartum), and even threatening the life of the mother and fetus [9]. In this novel COVID-19 pneumonia epidemic prevention war, pregnant women, as a special focus group, received special attention. GDM patients had low immunity, which led them to be susceptible to novel COVID-19 pneumonia. Therefore, the home protection and diet and exercise guidance of GDM patients in the novel COVID-19 pneumonia epidemic is very important.

2. Key Points for Home Protection for GDM Patients [10]

2.1. Window Opening and Ventilation

Maintain fresh air and suitable temperature in the living room, open windows and ventilate daily, and pay attention to keeping warm during the ventilation period to prevent colds.

women's daily necessities such as towels, bath towels, tableware, and bedding should be used separately to avoid cross infection.

2.2. Hand Hygiene

Use the seven-step washing technique to maintain hand hygiene at all times. Family members can supervise each other to improve hand hygiene compliance. After washing hands, use a paper towel to dry any water stains.

2.3. Cough Etiquette

Cover your mouth and nose with a napkin when sneezing or coughing, and dispose of used tissue in the trash can. After coughing, wash your hands immediately using the seven-step washing technique. When talking to someone, maintain a distance of at least one meter and do not talk directly to avoid splashing droplets.

2.4. Personal Protection

- 1) Regularity of life, sufficient sleep, drinking plenty of water, exercising appropriately, maintaining a good mindset, and enhancing one's own resistance;
- 2) It is necessary to take protective measures during external production inspections and correctly wear disposable medical surgical masks. When on the road and in the hospital, try to maintain a distance of at least 1 meter between

people;

3) After going out and returning home, masks should be properly handled, clothes should be changed, hands should be washed, exposed areas such as the face and facial features should be cleaned, and clothing should be cleaned and disinfected as soon as possible. The jacket should be placed in a ventilated area.

2.5. Self-Health Monitoring and Management [11]

Conduct self-health monitoring, pay attention to daily temperature and weight changes, and regularly monitor fetal movements. If there are no special circumstances, you can negotiate with an obstetrician to appropriately extend the prenatal examination time and monitor the fetal intrauterine condition (fetal movement) at home. When it is necessary to undergo prenatal examination, an appointment should be made in advance, protective measures should be taken, and medical treatment time should be minimized as much as possible. Pregnant women with pregnancy complications and complications should strictly follow medical advice for treatment.

3. Key Points of Home Diet for Pregnant Women with Diabetes [7] [12]

The diet management of GDM patients should be implemented according to the MNT principle [13]. MNT is an important part of diabetes prevention, treatment, self-management and education. It means that through diet treatment, in line with the principle of individualization, patients can take in appropriate energy and nutrients to meet the nutritional needs of mothers and fetuses, while ensuring stable blood sugar, not leading to postprandial hyperglycemia, and avoiding or sincerely reducing various complications, non-drug intervention measures to ensure the safety of mother and child.

3.1. Variety of Food Types

In daily diet, consume foods such as grains, fruits and vegetables, fish, poultry, eggs, milk, and soybeans and potatoes. It is recommended to increase the protein content of staple foods appropriately, and choose low to medium glycemic index staple foods for at least 1 - 2 meals per day. Maintain a balanced diet, avoid overeating, and maintain weight control.

1) The food is thick and thin, which is conducive to digestion and absorption. For example, 50 g of Mantou and 50 g of boiled eggs can be eaten for breakfast. Breakfast: 25 grams of soda crackers. Lunch: 100 g salted river shrimp, 190 g fried cabbage with agaric, 100 g shrimp skin Winter melon soup, 100 g buckwheat noodles. Lunch point: 150 grams of cucumber juice. Dinner: 130 g Shredded pork and green pepper with green pepper, 100 g loofah egg soup, 110 g celery mixed with sea rice, 100 g rice (rice and millet). Late: 220 grams of milk;

2) Increase the intake of vegetables and fruits rich in vitamins, and choose

more dark vegetables, such as Chinese cabbage, spinach, celery, lettuce, rapeseed moss, cucumber, etc; Apples, oranges, strawberries, kiwifruit, grapefruit, etc. Be aware that fruit juice cannot replace fruit;

3) Eat fish and poultry eggs in moderation. Protein intake can enhance muscle protein synthesis and metabolism, with a general intake of 1.0 g/(kg·d), such as lean pig, beef, lamb, rabbit, fish, shrimp, eggs, etc.

4) Reduce the intake of red meat and processed meat in animal foods, limit animal foods such as barbecue, marinated, and fried, and eliminate the consumption of wild animals.

3.2. Control Intake

GDM patients must strictly control their appetite, and generally do not advocate eating candies, preserved fruits, sweet drinks, sweet biscuits, cakes, ice cream, etc. with added sucrose, glucose, maltose, etc. Eating fruits should also choose fruits with low sugar content and low blood sugar index. It is advisable to eat them between meals or before bedtime. If fruits are consumed, staple foods should be reduced accordingly. Reduce oil and salt, choose multiple plant oils as edible oils, with oil ranging from 25 to 40 g/d and salt ranging from 6 g/d (for the general population), maintain sufficient drinking water, advocate drinking plain water, and avoid sugary beverages.

3.3. Choosing the Correct Cooking Method

There are many factors that affect the blood glucose index of food, including the softness, thickness, particle size, gelatinization degree of starch, dietary fiber content, etc. The cooking method of food is one of the important factors that affect the blood glucose index, such as potato mash having a higher blood glucose index than potato chunks. To avoid cooking causing an increase in the blood sugar index of food, the following points should be noted: processing should not be too delicate; eat some coarse grains appropriately; cook dishes as quickly as possible on a high heat; Except for special needs, cereal foods should not be added too much water or heated for too long, as this can increase the degree of gelatinization and blood sugar index of the food. In addition, increasing acidity appropriately when cooking food can also reduce the blood sugar index of the food, such as adding vinegar or lemon juice during cooking.

3.4. Fruits Should Be Appropriate and in Moderation

Choose low-sugar fruits such as apples, strawberries, nectarines, etc; It is not advisable to eat too much fruit each time, and it is best not to exceed 100 grams; Eating between meals should be avoided after meals. Generally, it is advisable to choose between 9:00 am to 9:30 am, 15:00 to 16:00 pm, and around 21:00 before going to bed at night. It is best to choose to eat during the extra meal time, which can be directly consumed as an extra meal to prevent hypoglycemia and keep blood sugar levels stable.

4. Key Points of Home Exercise for GDM Patients [13]

GDM patients should not only control their diet, but also engage in appropriate exercise, usually one hour after meals. Through regular and regular exercise, with a duration of about 20 - 30 minutes each time, the range of exercise ranges from mild to moderate, such as walking, doing exercises, etc. During exercise, attention should be paid to observing contractions. If you feel tired or have contractions, you should rest immediately. Enhance physical fitness through exercise, ensure sufficient and regular sleep, and maintain a calm and optimistic attitude. Additionally, it should be noted that individuals with threatened premature birth or other serious complications should not exercise.

5. Summary

As a special group with low immunity, GDM patients deserve our attention. During the epidemic, it is very important to do a good job of home protection, increase exercise, reasonably control diet, and reasonably control the weight gain during pregnancy. Here, we will sort out the relevant contents, hoping that more people will pay attention to diabetes patients during pregnancy.

6. Limitations and Future Directions

This paper only summarized the home protection and diet and exercise management measures for GDM, but did not verify all the measures based on evidence. The next step is to summarize the evidence in this field.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Huang, C., Wang, Y., Li, X., *et al.* (2020) Clinical Features of Patients Infected with 2019 Novel COVID-19 in Wuhan, China. *The Lancet*, **395**, 497-506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- [2] Chen, N., Zhou, M., Dong, X., *et al.* (2020) Epidemiological and Clinical Characteristics of 99 Cases of 2019 Novel COVID-19 Pneumonia in Wuhan, China: A Descriptive Study. *The Lancet*, **395**, 507-513. [https://doi.org/10.1016/S0140-6736\(20\)30211-7](https://doi.org/10.1016/S0140-6736(20)30211-7)
- [3] CDC (2020) National Health Commission Announcement No. 1 of 2020. CDC. <http://www.nhc.gov.cn/jkj/s7916/202001/44a3b8245e8049d2837a4f27529cd386.shtml> (In Chinese)
- [4] NICE (2019) NICE Guideline [NG121]: Intrapartum Care for Women with Existing Medical Conditions or Obstetric Complications and Their Babies. NICE. <http://www.nice.org.uk/guidance/ng121>
- [5] World Health Organization (2020) Clinical Management of Severe Acute Respiratory Infection When Novel Coronavirus (nCoV) Infection Is Suspected: Interim Guidance. World Health Organization. <http://www.doc88.com/p-99139914722471.html>

- [6] Li, F. (2019) The Therapeutic Effect of Diet and Exercise Intervention on Diabetes Patients during Pregnancy and the Role of Pregnancy Outcome. *Diabetes New World*, **22**, 108-109.
- [7] Wang, X. and Li, W. (2017) Effect of Diet and Exercise Guidance on Blood Glucose Level and Pregnancy Outcome of Patients with Gestational Diabetes. *Hebei Medicine*, **39**, 397-399.
- [8] Gong, K., Zhu, B. and Tao, F. (2022) Research Progress on the Relationship between Pregnancy Sleep and Pregnancy Diabetes. *Chinese Journal of Epidemiology*, **7**, 1162-1166.
- [9] Xie, X., Kong, B. and Duan, T. (2018) *Obstetrics and Gynecology*. 9th Edition, People's Health Publishing House, Beijing, 65.
- [10] National Health Commission (2020) Guidelines for Public Protection against Pneumonia Caused by Novel COVID-19. National Health Commission. <http://www.nhc.gov.cn/jkj/s7915/202001/bc661e49b5bc487dba182f5c49ac445b.shtml>
- [11] Liu, X., Zhu, G., Hu, B., *et al.* (2020) Construction of Management Scheme for Pregnancy Complicated with Novel COVID-19 Infection. *Nursing Research*, **34**, 553-557.
- [12] National Health Commission of the People's Republic of China (2020) Nutrition Dietary Guidance for Prevention and Treatment of Pneumonia Caused by Novel COVID-19. National Health Commission of the People's Republic of China. <http://www.nhc.gov.cn/xcs/fkdt/202002/a69fd36d54514c5a9a3f456188cbc428.shtml>
- [13] Xu, X. (2018) Diet, Exercise and Management of Diabetes in Pregnancy. *Journal of Obstetrics and Gynaecology*, **4**, 249-251.