

บทความ

(ต่อจากฉบับที่แล้ว Vol. 17. No. 30)

Public Health Guidelines for Enhancing Diabetes Control Through Maternal- and Child-Health Programs**REFERRAL TO CARE**

Women with established diabetes and women who develop GDM should be considered at high risk and be referred immediately for specialized care if such care is not available on-site. This will ensure that activities, such as determination of the appropriate level of care needed by prepregnant and pregnant women with diabetes, consultation, training, referral, and follow-up, can best be coordinated within the various components of the health-care system, be it a public health setting, private medical setting, hospital, or community clinic. Optimally, a perinatal center for high-risk individuals will be available—particularly for women with established diabetes mellitus—that offers a multidisciplinary team consisting of an obstetrician/perinatologist, an internist/endocrinologist, a social worker, a dietitian, and a nurse/patient educator. If this level of care is unavailable, the patient should receive, at a minimum, care from a local obstetrician knowledgeable in management of diabetes during pregnancy. Patient education should be an integral part of medical care. The public health role in referrals is to identify care resources, assure access to care, follow up to ensure that care is obtained, and assure that the care obtained is appropriate.

Obtaining a plan of care from the provider to whom a referral is made is desirable for several reasons: (1) it describes the elements that will/will not be provided, which helps the public health clinic identify other resources that may be needed to fill gaps; (2) it provides information on the comprehensiveness and quality of care provided by professionals/facilities to whom patients are referred; and (3) it may be valuable for follow-up for postpartum care or subsequent pregnancies.

The public health sector should retain a role in certain aspects of patient care (such as follow-up, education, social services, transportation, home visits), even though patients may be referred for special needs. While direct care may not be provided to high-risk women in the public health-care setting, public health professionals should be aware of the elements of appropriate care to assess the quality of services provided by the professionals/facilities to whom they refer.

Elements of Care for Women with Gestational Diabetes

1. It is recommended that each patient be seen at regular intervals and have a provider available by phone to discuss any problems.
2. Dietary management is the primary therapeutic strategy for blood-glucose control. Each patient should receive nutrition assessment and counseling.
3. Blood pressure should be monitored carefully.
4. Maternal weight gain should be monitored. In general, a total weight gain of 24-28 pounds has been recommended. Excessive changes in weight should be avoided, and patients should not attempt to lose weight. A woman's nutritional status needs to be monitored carefully; weight-gain recommendations need to be individualized; and nutrition-care plans need to be developed accordingly with considerations to factors such as exercise/activity patterns, insulin dosages or other medications, and individual food preferences. A woman's pregravid weight seems to be the most sensitive indicator for weight gain during pregnancy. Many studies propose that women who are underweight pregravid may need to gain more than the usually recommended 24-28 pounds for a normal weight pregravid woman. Similarly, for women who are overweight or obese pregravid—often a predisposing risk factor for developing GDM—weight gains of less than 24-28 pounds may be sufficient, and intakes of 30 kcal/kg ideal body weight appropriately balanced with carbohydrates, fats, and proteins may be more appropriate. Considerably more research in the area is needed.
5. In many centers, if dietary management is not successful in maintaining control (fasting plasma glucose under 105 mg/dl [5.8 mmol/L] and/or the 2-hour postprandial plasma glucose under 120 mg/dl [6.7 mmol/L] on two or more occasions within a 2-week in-

terval), insulin therapy is initiated (7). Although these values are even less than those recommended for nonpregnant women with diabetes, the benefits of tight control are believed to outweigh more lax control. Patients should be treated with highly purified nonbeef or human insulin to minimize the likelihood of problems related to insulin antibodies. The safety of oral hypoglycemic agents during pregnancy has not been adequately evaluated, and they are not recommended. If the patient is put on insulin, treatment guidelines for women with established diabetes should be followed.

5. If insulin is the therapy of choice, blood glucose should be self-monitored, and patients should be educated to ensure appropriate use and evaluated regularly. (Urine testing is not a sufficiently reliable indicator of blood-glucose levels during pregnancy.) Patients who use insulin should measure fasting blood glucose and 2-hour postprandial blood glucose daily to maintain glycemic control as near to normal as possible.
7. Ketones should be measured in the clinic and followed up, if positive, to prevent starvation ketosis. If the patient is losing weight, a dietary history should be obtained and caloric intake adjusted carefully based on pregravid weight, levels of exercise, etc.
8. Breast-feeding should be encouraged.

Elements of Care for Women with Established Diabetes.

1. Pregnancy should be planned so that blood glucose can be normalized before conception and throughout gestation.
2. Throughout pregnancy, glucose levels must be monitored daily by the patient (a minimum of four times daily for best results), and on each visit, by the health-care provider.
3. The safety of oral hypoglycemic agents in pregnancy has not been established, and they are not recommended.
4. The majority of pregnant women with established diabetes will require twice-daily injections of both intermediate- and short-acting insulin for control. For patients on twice-daily insulin injections, a dietary program consisting of three meals and three snacks has been suggested.
5. Maternal serum alpha-fetoprotein screening for detecting neural-tube defects should be performed on all pregnant women at about 16 weeks' gestation, especially those with established diabetes.

Nutrition Counseling.

1. The public health-care sector should ensure that nutrition counseling is available. Certain principles apply for both gestational and established diabetes.
2. Each patient should receive individual nutrition assessment and counseling consistent with the recommendations for caloric distribution prepared by the American Diabetes Association in 1979 (8).
3. The nutrition plan should contain 35-38 kcal/kg ideal body weight and be appropriately balanced with carbohydrates, fats, and proteins (7).
4. Patients should divide their caloric intake among three meals and several snacks.
5. The average daily caloric intake for the pregnant woman with diabetes will range from 2,000 to 2,400 calories. Lactating women may require an additional 600-800 calories daily more than a normal diet for a nonpregnant woman.
6. Obese patients should not lose weight during pregnancy because weight loss may increase the risks for retarded fetal growth. On the average, a woman should gain 24-28 pounds during pregnancy.

Patient Education. Diabetes in pregnancy cannot be managed adequately without patient education and self-management. Therefore, the public health clinic should ensure that patient education is an integral component of the care plan developed for each patient. All pregnant women identified with either GDM or established diabetes should receive: (1) information about the interaction of pregnancy and diabetes; (2) information on the importance and frequency of blood-glucose self-monitoring (established diabetes and gestational if managed with insulin); (3) instruction on how to self-monitor blood glucose (established diabetes only, unless GDM treated with insulin) and urine testing for ketones; (4) instruction regarding use of medications; and (5) exercise instruction.

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In addition, women with GDM should be instructed in the importance of postpartum weight control, including appropriate exercise, due to the increased likelihood of developing diabetes in later years. Women with established diabetes should be instructed in the importance of preconception counseling and blood-glucose normalization before conception in future pregnancies to reduce the risk of congenital anomalies from diabetes. In addition, women should be aware that pregnancy can exacerbate complications of diabetes.

The public health sector can play a major role in instructing patients about self-monitoring. Self-monitoring demonstrates the day-to-day variability in glucose levels; promotes self-discipline, control, and a heightened understanding of the condition; provides immediate feedback on hyperglycemia or hypoglycemia; and provides essential data to enable pregnant women and their health-care providers to make appropriate changes in diet, exercise, and insulin therapy.

Because urine-glucose testing is not a sufficiently reliable indicator of glucose levels, frequent blood-glucose determinations are strongly recommended throughout pregnancy for women with established diabetes or with GDM controlled with insulin. The practitioner should instruct the pregnant woman with established diabetes to test urine for ketones and to self-monitor blood glucose throughout pregnancy. Patients with established diabetes should be informed that insulin requirements may increase substantially in the second and third trimesters. The public health-care sector should ensure the availability of equipment critical to self-monitoring.

FOLLOW-UP

Short- and long-term follow-up are integral components of care for this high-risk population. In the short term, it is important for the public health sector to identify sources of care during pregnancy to which patients can be referred and then to make certain the referrals are completed.

For women with GDM, a repeat oral glucose-tolerance test (OGTT) is recommended at the first postpartum check-up. If the test is positive, the patient should be provided with or referred for treatment; if the test is negative, the patient should be advised that she is still at risk of developing diabetes later in life. She should be informed that the onset of diabetes may be delayed or prevented if she attains and maintains ideal body weight, and, if necessary, a referral for counseling on diet and/or weight control should be made. Regular follow-up and an annual OGTT are recommended.

Follow-up for the woman with established diabetes entails an adjustment of the insulin dosage after delivery (usually to the prepregnancy level), informing the mother about the importance of returning to her ideal body weight, and achieving and maintaining good blood-glucose control postpartum. In addition, it is important to provide counseling for the woman with established diabetes regarding the importance of glucose control before any subsequent pregnancies. Referral to a family planning clinic for an appropriate contraceptive method may also be appropriate.

RECOMMENDED RESOURCES

Successful pregnancy outcomes depend on linkages and referrals to appropriate care and services. A list of resources that may be used for referral or that may provide educational and promotional materials is presented below. While this list is not exhaustive, it is indicative of the resources available to improve pregnancy outcomes.

- American Association of Diabetes Educators
- American College of Obstetricians and Gynecologists
- American Diabetes Association
- Division of Diabetes Control, Center for Prevention Services, CDC
- Crippled Children's Programs
- Diabetes Research and Training Centers
- Family Planning Clinics

Juvenile Diabetes Foundation
Maternal and Child Health Programs
National Diabetes Advisory Board
National Diabetes Information Clearinghouse
National Institute of Child Health and Human Development
National Research Council
State Diabetes Control Programs
Women's, Infants', and Children's Nutrition Programs (WIC)

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สถานการณ์โรค

โรคติดต่ออันตราย

อหิวาตกโรค

<u>เอเชีย</u>	ป่วย	ตาย	<u>แอฟริกา</u>	ป่วย	ตาย
มาเลเซีย 6-12 ก.ค.	1	0	มาลี 30-มิ.ย.-6 ก.ค.	187	17
อินเดีย 1 ม.ค.-15 มี.ค.	207	3	รวันดา 1-30 เม.ย.	137	4
ญี่ปุ่น 2 ก.ค.	21	0	i = Imported cases		

กาฬโรค

<u>แอฟริกา</u>			<u>อเมริกา</u>		ป่วย	ตาย
มาดากัสการ์ 2-8 มิ.ย.	15	1	บราซิล 24-26 ม.ค.		2	0
s = Suspected case						

ไข้เหลือง

<u>อเมริกา</u>	ป่วย	ตาย
บราซิล 14-31 มี.ค.	4	3
2-23 เม.ย.	2	2
28 พ.ค.-1 มิ.ย.	1	1

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