

Gestational Diabetes Mellitus (GDM)

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GDM

In contrast to patients with pre-gestational diabetes, patients with true GDM **are not** at increased risk of having an infant with congenital anomalies because the onset of the disorder is after organogenesis, and they do not experience diabetes-related vasculopathy because of the short duration of the disorder.

Short-term consequences

- Large for gestational age(LGA) newborn and macrosomia
- Pre eclampsia and gestational hypertension
- Polyhydramnios
- Stillbirth

However, the risk of stillbirth does not appear to be increased in patients with good glycemic control, though ascertainment of good control can be challenging.

Short-term consequences...

- Neonatal morbidity

including hypoglycemia, hyperbilirubinemia, hypocalcemia, hypomagnesemia, polycythemia, respiratory distress, and/or cardiomyopathy. These risks are related, in large part, to maternal hyperglycemia.

Long-term consequences

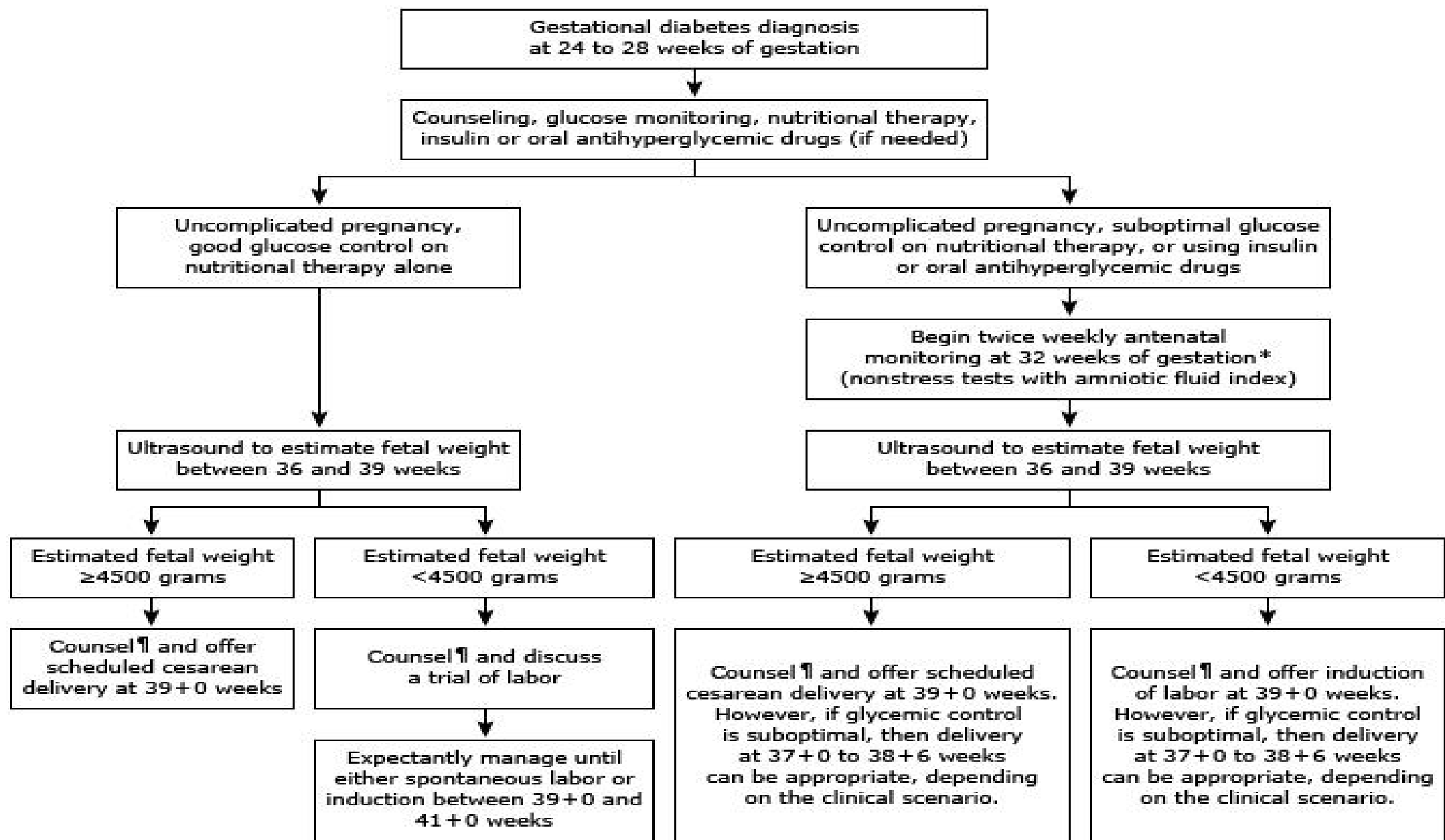
- GDM is a strong marker for future maternal development of diabetes mellitus (primarily type 2), metabolic syndrome, and cardiovascular disease.
- GDM increases the offspring's risk for developing obesity and abnormal glucose tolerance.

CLASSIFICATION/TERMINOLOGY

- A1: glycemic control achieved **without** medication
- A2: glycemic control achieved **with** medication

Glucose monitoring, targets, and management

- Fasting blood glucose concentration: <95 mg/dL (5.3 mmol/L)
- One-hour postprandial blood glucose concentration: <140 mg/dL (7.8 mmol/L)
- Two-hour postprandial glucose concentration: <120 mg



Fetal surveillance

- **A1 GDM with good glucose control:**

Patients who are euglycemic with nutritional therapy alone (ie, class A1 GDM) and who have no other pregnancy complications (eg, no macrosomia, preeclampsia, growth restriction, polyhydramnios, or oligohydramnios) do not appear to be at increased risk of stillbirth; therefore, omitting antenatal fetal surveillance (nonstress test [NST] and amniotic fluid index, biophysical profile [BPP]) is reasonable.

If the practitioner chooses to order NSTs or BPPs in these pregnancies, the tests should probably be begun closer to term than **32 weeks** (eg, 36 weeks) since no increased risk of stillbirth has been demonstrated in this population.

Fetal surveillance...

The American College of Obstetricians and Gynecologists (ACOG) made No specific recommendations for fetal assessment in patients with well-controlled glucose levels on nutritional therapy, except for assessment of **amniotic fluid volume**; this decision was left to local practice patterns.

Fetal surveillance...

- **A2 GDM or A1 GDM with suboptimal glucose control:**

We obtain **twice weekly** NSTs plus an amniotic fluid index beginning at 32 weeks of gestation in (algorithm 1):

- All patients who use insulin or an oral antihyperglycemic medication to achieve good glycemic control.
- All patients with suboptimal glycemic control. Ideally, patients with suboptimal glucose control will be brought under better control with diet and/or medication.

Management of selected antenatal complications

However, administration of antenatal corticosteroids (ACS), if indicated, has hyperglycemic effects, beginning approximately 12 hours after the first steroid dose and lasting for approximately five days

We monitor capillary blood glucose concentrations regularly (eg, at least every four times daily, but more frequently depending on glucose levels and difficulty in obtaining control) beginning 12 hours after the first dose of Betamethasone and continuing for 24 hours after the second dose. We then reduce the frequency to four times per day if glucose levels are reasonably well controlled. If a fasting level exceeds **100 mg/dL** (5.5 mmol/L) or a postprandial level exceeds **140 mg/mL** (7.8 mmol/L), we would treat with **subcutaneous insulin**.

Postpartum management and follow-up

- **Breastfeeding:**

Breastfeeding improves maternal glucose metabolism and thus may reduce the glucose levels obtained during a postpartum glucose tolerance test (GTT).

Several prospective studies have reported that breastfeeding decreased the long-term incidence of type 2 diabetes after a diagnosis of GDM compared with not breastfeeding.

Postpartum management and follow-up...

- **Contraception:**

While any type of contraception is acceptable

There is no convincing evidence that hormonal contraceptives (estrogen-progestin or progestin-only) increase the user's risk of developing type 1 or type 2 diabetes.

a patient is concerned about hormonal issues, a copper-releasing IUD is a good alternative.

Postpartum management and follow-up...

- **Check postpartum glucose levels:**

we usually check glucose levels for 24 hours, obtaining both fasting and postprandial blood glucose values

If fasting glucose concentrations suggest overt diabetes (fasting glucose ≥ 126 mg/dL [7 mmol/L] or a postprandial glucose is ≥ 200 mg/dL [11.1 mmol/L]), treatment of hyperglycemia is absolutely warranted

- **Obtain a GTT at 4 to 12 weeks:**

Patients with normal/near normal postpartum blood glucose levels should undergo a two-hour 75 gram oral GTT 4 to 12 weeks after delivery to check for diabetes or prediabetes

Postpartum management and follow-up...

- **Screening for depression:**

Although screening for depression is indicated in all postpartum patients, clinicians should be aware that postpartum depression is more common among patients with diabetes.

Thank you for your attention

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