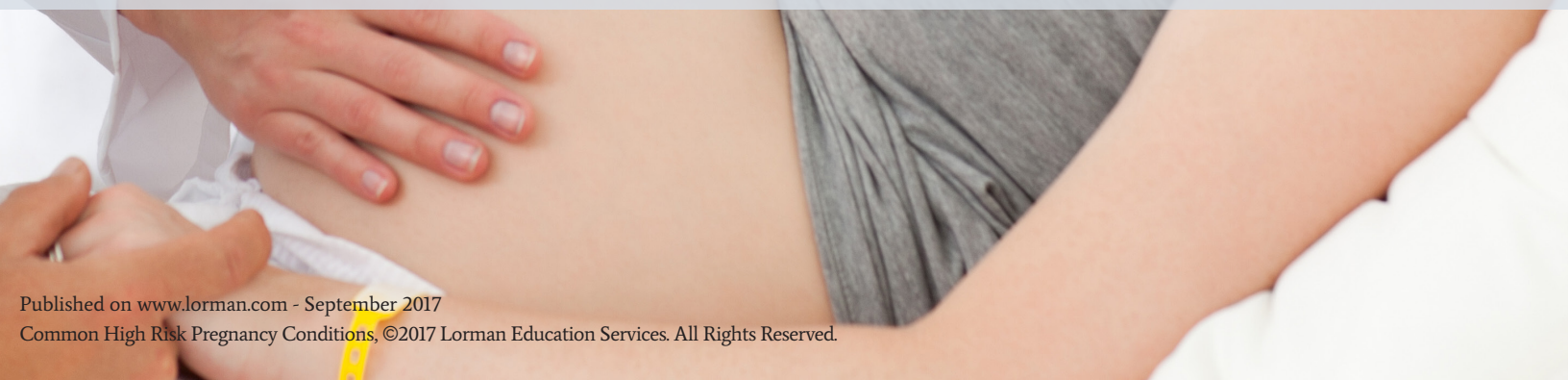
COMMON HIGH RISK PREGNANCY CONDITIONS



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This white paper addresses complications that occur during pregnancy. While the majority of mothers remain healthy during their pregnancies and deliver healthy infants, there are instances when complications arise. These complications range from mildly annoying, such as morning sickness and swelling of the feet, to life threatening to both mother and child, such as preeclampsia (Division of Reproductive Health, National Center for Chronic Disease and Health Promotion, 2014). It is vital that pregnant women receive adequate prenatal care to avoid some of the more common high risk pregnancy conditions.

Most high risk pregnancy conditions can trace their origins back to a few basic risk factors. These risk factors include the following:

- Being overweight or obese before conception
- Conceiving before age 20 or after age 35
- Predisposition to diabetes
- History of multiple miscarriages, stillbirths or having more than five (5) full term pregnancies

While many women with these risk factors have an uneventful pregnancy and deliver health full term infants, women with any of these risk factors need to heed their obstetrician's advice to protect not only themselves, but also their unborn child.

Common Complications

This paper will provide a brief overview of the more common complications, and then focus on those that appear most often; obesity, preeclampsia and gestational diabetes mellitus (GDM).

Anemia

Anemia is, by far, one of the most common complications to occur during pregnancy. Anemia occurs when the red blood cells (RBCs) in the body cannot carry enough hemoglobin to provide oxygen to the rest of the body (Wedro, 2012). If a woman had heavy menstrual cycles before becoming pregnant, it is likely she entered pregnancy being slightly anemic and the pregnancy exacerbates this condition. Symptoms of anemia include shortness of breath during activity, increasingly tired, pale appearance to the skin and a rapid heartbeat. These symptoms are similar to many other pregnancy symptoms. A simple blood test can determine if anemia is the cause of these symptoms.

Fortunately, anemia is easily treated with dietary changes. Anemic patients are encouraged to eat a diet high in iron, with a focus on dark leafy green vegetables, eggs and meat. There are cereals and breads fortified with iron are also excellent choices. If dietary changes are not enough to resolve the issue, doctors may prescribe an iron supplement. Anemia can also affect folic acid levels in the body as well. Since folic acid is vital to the fetus' neural tube development, foods high in folic acid will also be recommended.

Urinary Tract Infection

A urinary tract infection, or UTI, is simply a bacterial infection of the urinary tract. While uncomfortable at any stage of life, they are particularly annoying for pregnant women. Additionally, an uncontrolled UTI can introduce bacteria to the fetus either before or during birth, making the baby ill. Symptoms of a UTI during pregnancy include pain or burning when urinating, fever and/or fatigue, frequent need to urinate, pressure in the low belly, nausea, back pain and urine that smells bad or is cloudy or reddish in color (Division of Reproductive Health, National Center for Chronic Disease and Health Promotion, 2014).

Since pregnant women often need to urinate frequently, a urine sample is taken to test for bacteria. If a UTI is present, the obstetrician will treat will antibiotics. Women will be encouraged to drink more fluids to flush the infection from their body.

Mental Health Conditions

While often ignored, mental health conditions during pregnancy can be serious. Many psychotropic drugs are dangerous to the developing fetus so many mothers choose not to take them during pregnancy. However, a mother suffering from depression is at high risk for developing postpartum depression, making it extremely difficult to care for herself or to care for and bond with her infant (Division of Reproductive Health, National Center for Chronic Disease and Health Promotion, 2014).

Signals such as a sad mood, loss of interest in favorite activities, feeling worthless or guilty, inability to concentrate, and changes in appetite or sleep patterns are all common as the body changes during pregnancy. If these signals last two weeks or longer or are accompanied by any indication of suicide or thoughts of harming oneself or their baby, immediate attention is required.

Hyperemesis Gravidarum

Nausea and vomiting, or “morning sickness” as it is commonly called, occurs during the first three months of most pregnancies. It is, by far, the most common complaint of pregnant women. It is thought to be caused by rapidly rising hormones released by the placenta during the first trimester (Division of Reproductive Health, National Center for Chronic Disease and Health Promotion, 2014). Most morning sickness is managed by a bland diet, rest and increasing fluid intake.

Some women’s nausea and vomiting is so severe that it causes weight loss and dehydration causing a possible life threatening condition called hyperemesis gravidarum. In the event of hyperemesis gravidarum, the mother must be hospitalized to receive fluids and other medical intervention. Generally hyperemesis gravidarum resolves by the fourth month of gestation.

Specific Complications

The three most common high risk complications in pregnancy are obesity, preeclampsia and gestational diabetes mellitus (GDM). These three conditions have repercussions that last beyond pregnancy and can affect women later in life.

Obesity

According to the American College of Obstetrician and Gynecologists (ACOG), more than a third of American women are obese and over fifty percent of pregnant women are overweight or obese (Obesity in Pregnancy, 2013). Whether a woman is overweight or obese is based on a measurement called Body Mass Index (BMI), which is a computation based on a person's height and weight. A BMI of 18.5-24.39 is considered normal while a BMI of 25-29.9 is considered overweight. A BMI of 30-39.9 is considered obese and a BMI over 40 is considered morbidly obese (Obesity in Pregnancy, 2013).

There are numerous complications that can occur in pregnancy due to obesity. These include GDM, hypertension/preeclampsia, C-section delivery, post-partum weight retention, preterm birth, stillbirth, congenital abnormalities in the fetus, childhood obesity, lack of breastfeeding and complications from anesthesia management (Obesity in Pregnancy, 2013). Gestational weight gain should be between 11 and 20 pounds. Research shows that obese women who do not gain a great deal of weight during their pregnancy increase their chances of having a healthy and successful full term pregnancy.

Contrary to popular belief, many obese women are vitamin deficient due to the quality of their diet (Myths and Truths of Obesity and Pregnancy, 2011). Most are deficient in iron, while roughly a quarter are deficient in folic acid. Both are required to prevent anemia in the mother and to assist in prenatal growth and development in the fetus.

Since many overweight/obese women must undergo a C-section to deliver their baby, anesthesia management must be addressed early in the pregnancy. Anesthesiologists generally recommend an epidural if anesthesia will be required for overweight patients. However, this can be difficult since landmarks for the epidural can be obscured and the excessive fat tissue. General anesthesia is always a risk, but there is an increased risk due to difficulties in endotracheal intubation and difficulties that arise because of a difficult intubation.

Obesity increases the risk of preterm birth, which is defined as early delivery for medical reasons. However, for reasons not known, the spontaneous preterm birth rate is 20% lower. Should an obese woman require a C-section, she has an increased risk of excessive blood loss, wound infection and sleep apnea. Additionally, many C-sections performed on obese women can last longer than two hours. To avoid wound infection, the ACOG recommends the use of a higher dose of IV antibiotics during surgery and additional suturing of deeper tissues layers to prevent wound separation (Obesity in Pregnancy, 2013). Obesity also increases the risk of venous thromboembolism (blood clot) so the use of a pneumatic compression device during surgery or heparin and compression stockings prior to surgery may be required. Obese patients undergoing a C-section may also need additional blood products and extra personnel in the operating room.

Asthma and obstructive sleep apnea are common conditions in obese women and can be exacerbated by pregnancy. Both increase the risk for non-pulmonary pregnancy complications such as C-section and preeclampsia (Obesity in Pregnancy, 2013). Obesity increases the risk of respiratory complications in pregnancy with some 30% of women experience an exacerbation of asthma during pregnancy. Uncontrolled asthma can create oxygen deficiencies for the developing fetus and place additional strain on the cardiovascular system due to the controller medications required.

Obesity risks continue postpartum. Breastfeeding rates are poor among obese women with only 50% of those attempting continuing beyond six months. Breastfeeding is associated with less postpartum weight retention and the ACOG recommends it be encouraged due to the benefits to both mother and child (Obesity in Pregnancy, 2013). Breastfeeding is a challenge for obese women since it takes longer for their milk to come in and their milk production tends to be lower. Complications from C-section surgery can make it difficult for the mother to breastfeed.

Postpartum care should include continued nutritional counseling and recommendations to increase activity to assist in weight loss. Additionally, patients should be advised to lose weight prior to becoming pregnant again.

Preeclampsia

Preeclampsia is a hypertensive disorder that occurs after the twentieth week of pregnancy and can be fatal to both the mother and baby (Lee, 2014). Affecting five to eight percent of all pregnancies, preeclampsia is responsible for “76,000 maternal deaths and 500,000 infant deaths worldwide” annually (Lee, 2014). Preeclampsia is tied to high blood pressure. It inhibits the arteries from carrying blood to the placenta which can potentially reduce the amount of oxygen and nutrients the baby receives. Uncontrolled preeclampsia becomes eclampsia which causes seizures and can cause permanent damage to the mother’s vital organs. If not treated promptly, eclampsia can cause coma, brain damage and death (Lee, 2014).

Of the high risk pregnancy conditions, preeclampsia is the most common since it can strike in otherwise healthy women, even those without risk factors. Fortunately, most of the babies born to women with preeclampsia are healthy at birth especially if the delivery comes near term.

While researchers have not determined the cause for preeclampsia, they believe it may be caused by a combination of four (4) factors; autoimmune disorders, blood vessel problems, diet and/or genetic issues (Preeclampsia - PubMed Health, 2012).

Risk factors of preeclampsia include pregnancy before age 20 or after age 35, first time pregnancy, obesity, chronic high blood pressure, diabetes, kidney disease and carrying multiples (Lee, 2014) (Preeclampsia - PubMed Health, 2012). “As rates of hypertension and obesity have increased nationwide, and women are having children later in life, the risk for preeclampsia has grown simultaneously” (Lee, 2014). African American women have the highest rates of preeclampsia than any other racial or ethnic group.

The main symptoms of preeclampsia are high blood pressure (HBP) and proteinuria (excess protein the urine). Any blood pressure reading of 140/90 mm/Hg or higher is cause to look for preeclampsia. Some women also experience headaches, blurred vision, shortness of breath and swelling of the hands and face (Lee, 2014). Since these symptoms mimic many other side effects of pregnancy, they can be overlooked, particularly swelling. A sudden weight gain over a day or two or more than two pounds in a week is cause for medical intervention. When preeclampsia becomes severe, urine output can decrease, nausea and vomiting and belly pain on the right side that can be confused with heartburn or gallbladder pain (Preeclampsia - PubMed Health, 2012) can be present.

The only cure for preeclampsia is to deliver the baby. If the pregnancy is at least 37 weeks, the obstetrician may induce labor so the condition does not worsen (Preeclampsia - PubMed Health, 2012). If the preeclampsia is discovered early and is mild, it can be managed at home with bed rest, reduced sodium intake and increasing water intake. Occasionally, patients may be prescribed medications to reduce blood pressure.

Women may be admitted to the hospital for monitoring as well as to receive medication to control HBP and prevent seizures. The mother is often given steroids to speed up the baby's lung development. In the event the medical staff is unable to keep the preeclampsia under control and the diastolic pressure goes over 110 mm/Hg, the baby will be delivered.

Generally, the signs and symptoms of preeclampsia are gone six weeks after delivery. Occasionally, the HBP will increase temporarily after giving birth, but will return to normal within 72 hours. Blood pressure will need to continue to be monitored up to 12 weeks postpartum to ensure there are no additional issues.

Once a woman has preeclampsia in pregnancy, she is likely to develop it again. However, it tends to be less severe in subsequent pregnancies (Preeclampsia - PubMed Health, 2012). Additionally, having preeclampsia during pregnancy increases the risk of HBP with age.

Gestational Diabetes Mellitus (GDM)

GDM develops during pregnancy and affects how the body uses glucose (sugar), the body's main fuel (Diseases and Conditions: Gestational Diabetes, 2011). . The "body digests food to produce sugar (glucose) that enters the bloodstream. In response, the pancreas produces insulin. Insulin is a hormone that helps glucose move from the bloodstream into the body's cells where it is used as energy" (Diseases and Conditions: Gestational Diabetes, 2011). GDM increases blood sugar which affects both mother and child. Fortunately, blood sugar levels tend to return to normal postpartum. However, having GDM increases a woman's risk for developing type 2 diabetes in the future.

It is thought that “during pregnancy, the placenta that connects the baby to the blood supply produces high levels of various hormones” (Diseases and Conditions: Gestational Diabetes, 2011). Almost all of these hormones impact the action of insulin in the mother’s cells causing an increase in blood sugar. While a modest increase in blood sugar after meals is normal, particularly during pregnancy, the blood sugar increases to high levels. “As the baby grows, the placenta produces more and more insulin-blocking hormones. In GDM, placental hormones provoke a rise in blood sugar to a level that affects the growth and welfare of the baby” (Diseases and Conditions: Gestational Diabetes, 2011).

GDM generally develops during the last half of pregnancy; sometimes as early as the twentieth week. There are several risk factors for GDM, including:

- Over age 25
- Family or personal history of prediabetes. Prediabetes is a condition marked by slightly elevated blood sugar that may be a precursor to type 2 diabetes.
- A parent or sibling with diabetes
- GDM during a previous pregnancy
- Being overweight or a BMI over 30
- Polycystic Ovarian Syndrome (PCOS)
- Being African American, Hispanic, American Indian or Asian

Nearly every woman with GDM delivers a healthy baby. However, GDM can cause the baby to have excessive birth weight meaning that the baby weighs nine or more pounds at delivery. This excessive weight is caused by the “extra glucose in the mother’s bloodstream crossing the placenta, which triggers the baby’s pancreas to make extra insulin” (Diseases and Conditions: Gestational Diabetes, 2011). This causes the baby to grow too large and can increase the likelihood that the baby will be wedged in the birth canal necessitating a C-section.

GDM has serious complications, including HBP, preeclampsia and eclampsia. Additionally, women are at a substantially increased risk for developing GDM in future pregnancies or type 2 diabetes in the future.

GDM tends to be asymptomatic and is generally found during a routine screening called a Glucose Challenge Test. During the test, the woman will drink a syrupy glucose solution and 60 minutes later will have a blood test to determine her blood sugar level. Any reading higher than 140 means a woman is at risk for GDM. The obstetrician will then order a Glucose Tolerance Test. The mother fasts overnight and has a fasting blood sugar drawn. She then drinks another glucose solution, but this solution has a higher concentration of glucose. Blood is drawn every 60 minutes over a three hour period. If two of the three tests are higher than normal, the woman is diagnosed of GDM.

Treatment for GDM is similar to that of type 2 diabetes. Patients test their blood sugar several times daily, as well as during delivery and postpartum. Dietary changes, such as eating more vegetables, fruits and whole grains and eliminating refined carbohydrates are necessary. Doctors recommend moderate exercise during pregnancy to help move glucose to the cells. If medication is needed, as it is in ten to twenty percent of the cases, injectable insulin will be added.

To reduce the risk of developing type 2 diabetes later, mothers should breastfeed. Not only does breastfeeding help achieve post-pregnancy weight goals; it can help women avoid diabetes in the future. Additionally, it helps the child avoid obesity and diabetes in their future.

Summary

Pregnancy has its own unique side effects and conditions that are unique to the condition. The most common high risk conditions, GDM, preeclampsia and obesity, present their own particular set of challenges. Open communication between the obstetrician and their patient is vital to the health of both mother and baby. While these conditions have the capacity to be life threatening, proper management can ensure the health of both mother and baby.