

Assessment and Management of Gastrointestinal Disorders during Pregnancy

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Abstract

Pregnant women undergo several changes and adaptations in many organ systems. Some adaptations are secondary to hormonal changes in pregnancy, while others occur to support the gravid woman and her developing fetus. Several of the changes in maternal physiology during pregnancy include, for example, increased maternal fat and total body water, decreased plasma protein concentrations, especially albumin, increased maternal blood volume, cardiac output, and blood flow to the kidneys and uteroplacental unit and decreased blood pressure. Other physiologic changes include increased tidal volume, partially compensated respiratory alkalosis, delayed gastric emptying and gastrointestinal motility, and altered activity of hepatic drug metabolizing enzymes. Pregnancy is a special health state where these many physiological changes occur affecting more or less all anatomical systems, therefore many discomfort, disorders and pathological problems need an exceptional assessment and management. In Albania even though there are three levels of health care service: primary, secondary and tertiary, the care during pregnancy is done mostly by obstetrician and gynecologist and the majority of this discomforts and disorder are managed by them, however a multi disciplinary specialist care is often required. This paper will focus on gastro intestinal changes and disorders during pregnancy and their management. As universal medical postulate says prevention is the best cure, these changes during pregnancy should involve in special care from patient education so their will understand these changes and adaption to a medical specialist where the final health care service where medical tests care and necessary intervention are done appropriately. In conclusion, understating these changes and their profound impact of suitable assessment and care in pregnancy is essential to optimize maternal and fetal health.

Keywords: Pregnancy, physiological changes, gastrointestinal, assessment, management

Introduction

A comprehensive discussion of all the physiologic changes, disorders and management that occur in the gastrointestinal tract during pregnancy is beyond the scope of this paper. However, common physiologic alterations are discussed so that the physician dealing with gastrointestinal symptoms during pregnancy can better understand symptoms, assessment, management and their significance.

Most pregnant women experience gastrointestinal symptoms such as nausea, vomiting, heartburn or constipation. Motility disturbances, caused by altered hormone levels, probably explain most of these symptoms, although several other factors can contribute. While new-onset gastrointestinal symptoms are usually mild to moderate and respond to simple therapeutic measures such as lifestyle and dietary changes, some women suffer severe symptoms and need medical therapy. Moreover, chronic gastrointestinal diseases that affect young women, such as inflammatory bowel disease or chronic liver disease, can deteriorate and/or need altered diagnostic and therapeutic approaches during pregnancy. The treatment of gastrointestinal disorders during pregnancy requires special attention because the safety of both mother and child is of crucial importance.

Discussion

Hyperemesis Gravidarum

Nausea and vomiting occur in up to half of all pregnancies. This should be considered part of the normal course of a pregnancy. However, the term *morning sickness* does not refer the only morning period as the nausea and vomiting of pregnancy can occur at any time of day. The *normal* nausea and vomiting experienced by many pregnant women should be distinguished from hyperemesis gravidara. Hyperemesis is defined as an intractable nausea and vomiting, severe enough to cause dehydration. It occurs up to 2 % of all pregnancies [1]. Although older textbooks refer to a relationship between this entity and ambivalence about pregnancy, social stressors and psychological factors, present thinking about hyperemesis does not give credence to these pejorative associations. The present understanding of hyperemesis gravidarum suggests that elevated levels of human chorionic gonadotropin (hCG) has a central nauseant effect in susceptible women. Hyperemesis gravidarum generally is an illness only of the first trimester and tends to resolve in most patients around the time that hCG levels begin to decline during a pregnancy. Contributing to the illness of hyperemesis gravidarum is the delayed gastric emptying that is a normal part of pregnancy. This delayed gastric emptying is a manifestation of the progesterone effects upon gastrointestinal smooth muscle.

Medications used for the management of hyperemesis gravidarum include Promethazine,

Prochlorperazine and Metoclopramide. Oral vitamin B6 at a dose of 10-20 mg per day may also be helpful in controlling symptoms in some women. Use of Ondansetron for hyperemesis has been advocated by some however it is preferred to use this as a third line agent because of limited experience with use in pregnancy and costly factor as well. On the other hand, many pregnant women with hyperemesis gravidarum will require intravenous hydration and even nutritional supplementation. Because of the generally self-limited course of hyperemesis (it usually ends by the twelfth to fourteenth week of pregnancy) central hyperalimentation is not usually necessary and nasogastric feeding or peripheral parenteral nutrition is usually adequate in those cases where the patient with hyperemesis is progressively losing weight.

Hyperemesis can be associated with hyperthyroidism, hyperparathyroidism and elevated transaminases. In those cases of hyperemesis severe enough to require hyperalimentation it is recommended to screen for free T4, TSH, calcium, and check liver function test.

Gastroesophageal Reflux Disease

Gastroesophageal reflux disease is nearly universal in pregnancy due to the altered gastrointestinal motility that occurs in pregnancy [2]. Both delayed gastric emptying and decreased gastroesophageal sphincter tone occur due to the effects of progesterone on smooth muscle. Pregnancy related reflux is therefore not simply the result of increased intra-abdominal contents and can occur at any time in gestation. Treatment options include such things as lifestyle modification (small frequent meals, avoiding meals prior to bedtime, elevating the head of the bed, avoidance of smoking, caffeine and alcohol) and antacids. For patients with symptoms that persist despite such interventions, medications such as Sulcrafate, Ranitidine and Metoclopramide can be used. Sulcrafate is an excellent choice because it is not absorbed systemically and therefore has no fetal effects. All the H2 blockers appear to be relatively safe in pregnancy although our experience has shown that Ranitidine has the best pregnancy data. There is also extensive experience with the use of metoclopramide in pregnancy. Use of the proton pump inhibitors Omeprazole and Lansoprazole in pregnancy should be avoided.

Constipation

Constipation is a common complaint in pregnancy and once again is related to the effects of progesterone upon the smooth muscle of the bowel [3]. It can generally be managed by nonpharmaceutical methods such as bulk laxatives (Psyllium products such as Metamucil) and surfactants (such as docusate sodium). It is also helpful to reassure pregnant women that some degree of constipation is normal during pregnancy and a decreased frequency of bowel movements itself does not require treatment.

Cholelithiasis

Biliary disease is seen with increased frequency in pregnancy. This is both because of the altered smooth muscle activity of the gallbladder (again due to progesterone effects) and an increased lithogenicity of bile during pregnancy. Mild symptoms of biliary tract disease can be managed conservatively in pregnancy but for those patients with persistent symptoms or significant complications, cholecystectomy can be performed safely throughout pregnancy. The ideal time for cholecystectomy during pregnancy is the second trimester, while in the first trimester any abdominal surgery carries the risk of miscarriage and in the third trimester a cholecystectomy is associated with an increased risk of preterm labor as well as being technically more difficult [4]. However, necessary cholecystectomy should never be delayed because of a woman's gravid status.

Cholestasis of Pregnancy

Cholestasis of pregnancy is an interesting entity which presents as severe itching in a gravid woman. There are usually no findings on examination except for excoriations from extensive scratching. Investigations demonstrate the finding of elevated liver enzymes, although these enzyme elevations are generally not more than 4-5 times above the normal range [5]. Alkaline phosphatase may also be elevated but may be difficult to interpret as alkaline phosphatase is normally elevated in pregnancy. Ultrasound of the liver and gallbladder show no abnormalities. Measurement of serum *bile salts* however will show them to be markedly elevated. The underlying abnormality in cholestasis in pregnancy appears to be a biochemical one. Although the hepatocytes properly metabolize bilirubin there is a failure of excretion of the bile salts into the bile canaliculi. The bile salts therefore accumulate in the serum and are deposited into the skin inciting the intense pruritus characteristic of this disorder.

The fetus has been recently shown to be at increased risk of sudden fetal demise in this condition [5]. Therefore, it is the practice of obstetricians to increase fetal monitoring in patients with cholestasis of pregnancy. There are some individuals who advocate that early delivery should be done for this condition. Also, there is an increased risk of maternal and neonatal hemorrhage in this condition believed to be related to an associated malabsorption of vitamin K. Medical treatments for cholestasis in pregnancy include Cholestyramine, Phenobarbital and Ursodiol. Vitamin K supplementation at 10 mg per day should also be provided. The

unreliable experience with the use of these agents has not been very favorable. Fortunately, this condition rapidly resolves post partum, but may recur in subsequent pregnancies.

Preeclampsia and the HELLP syndrome

It is important to remember that preeclampsia and the HELLP syndrome are causes of elevated liver function tests during pregnancy. HELLP syndrome stands for hemolysis, elevated liver enzymes, and low platelets and is believed to be a severe form of preeclampsia.

Acute Fatty Liver of Pregnancy (AFLP)

Acute fatty liver of pregnancy (AFLP) is an uncommon illness that carries a mortality that may be as high as 30% [6]. It presents as a progressive hepatic failure that occurs in the third trimester or the postpartum period and usually occurs in association with preeclampsia.

Progressively rising liver enzymes are complicated by jaundice and coagulopathy and treatment includes both delivery and supportive management. Liver biopsy, if performed, will show extensive fatty infiltration of the liver. This disorder has been associated with the presence of LCHAD deficiency in the newborn and therefore all infants whose mothers have had AFLP should be screened for this metabolic abnormality.

Viral Hepatitis

Viral hepatitis is not an uncommon complication of pregnancy. Hepatitis A has no fetal effects and is not transmitted from mother to fetus. Hepatitis B and C however have significant rates of vertical transmission. In recent years all infants born in Albania receive hepatitis B vaccine. Infants born to mothers who are hepatitis B service antigen positive should receive a higher dose of the vaccine and also be given hepatitis B immune globulin. There is presently no treatment available to decrease the maternal fetal transmission of hepatitis C. Hepatitis E is a relatively rare disease but is significant because new infection with hepatitis E has a very high mortality rate during pregnancy that runs as high as 17% [7]. The reason for this is not understood but it is presumably related to immune changes that occur during pregnancy.

Inflammatory Bowel Disease

The course of inflammatory bowel disease is not significantly affected by pregnancy. However, if the disease is active at the time of conception, it is likely to remain so. Steroids, Sulfasalazine, antibiotics and 5 ASA have been used safely in pregnancy. Metronidazole, however, should be avoided in the first trimester. For patient women requiring TPN (total parenteral nutrition) during pregnancy, close monitoring of the blood glucose is required because of the increased insulin resistance seen in pregnancy.

Investigations

Indicated endoscopy, sigmoidoscopy, colonoscopy and biopsies can and should be performed during pregnancy with the same indications as would occur in the non-pregnant individual. There is no evidence of any increased complication rate for any of these procedures during pregnancy.

Conclusions

Gastrointestinal (GI) disorders represent some of the most frequent complaints during pregnancy. Some women have GI disorders that are unique to pregnancy, other pregnant patients present with chronic GI disorders that require special consideration during pregnancy. Contemporaneous knowledge of the gastrointestinal adaptation to pregnancy is necessary for accurate understanding the presentation and commonness and course of management of various GI disorders is necessary to optimize care for these patients' group.

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