Increasing Maternal Obesity and Weight Gain During Pregnancy

The Obstetric Problems of Plentitude

One does not have to be an epidemiologist to recognize the increasing prevalence of obesity in the population of reproductive-aged women. Although increased pregravid obesity is in and of itself a significant risk factor for adverse maternal and neonatal outcomes, additional weight gain during pregnancy compounds this risk for both the mother and her offspring. These issues are addressed in three separate but related articles in this month’s Obstetrics & Gynecology. DeVader et al (see p. 745) report that women with a normal pregravid body mass index (BMI) who gain more than 35 lb (43% of their population) have an increased risk of adverse perinatal outcomes, such as preeclampsia, failed induction, and large for gestational age infant.1 Similarly, Kiel et al (see p. 752), using the same birth registry, report that in overweight and obese women, gaining less than the recommended 15 lb (only 31%) was associated with a significantly lower risk of preeclampsia, cesarean delivery, and large for gestational age births.2 Last, Cedergren (see p. 759) reports a study using the Swedish birth registry, where optimal weight gain was 5–22 lb in women with a pregravid BMI between 20 and 24.9, less than 20 lb for a BMI between 25 and 29.9, and less than 13 lb with a BMI greater than or equal to 30.3 Again, a decrease in adverse obstetric and neonatal outcomes was observed with lower weight gain among obese women.

Before suggesting that we simply propose to limit weight gain in overweight and obese women during pregnancy, we must first return to the published guidelines on the subject, the 1990 report of the Institute of Medicine (IOM), Nutrition During Pregnancy.4 This report was written at a time when concern was focused on the low birth weight infant. Since that time, the focus has shifted to the greater concern of increasing rates of obesity. In 2006, the IOM convened a conference on this subject and published the workshop report, “Influence of Pregnancy Weight on Maternal Child Health.”5 The goal of the workshop was to report on the available data relating to the recent trends in maternal obesity and weight gain on the health of the mothers and children. Consistent with the three articles in this issue of Obstetrics & Gynecology, in the time between 1993 and 2003 there was an increase from 37% to 46% of women gaining greater than the IOM weight gain recommendations and a decrease from 30% to 23% of women gaining less that the IOM weight gain recommendations. The report also noted the increasing trends in maternal complications, such as preeclampsia, gestational diabetes, and cesarean delivery, associated with maternal pregravid obesity and increased weight gain in pregnancy.

Given this information, what should be done in the interim? One of the problems in defining the correct amount of weight gain during...
pregnancy is defining an optimal outcome. Cesarean delivery rates have often been used as a quality outcome measure, but today with the increasing number of elective primary (let alone elective repeat cesarean) deliveries, using cesarean rates as an outcome measure is less of an objective criterion. Likewise, in retrospective studies the distinction between preeclampsia, pregnancy-associated hypertension, and chronic hypertension is often difficult to discern. Birth weight is an excellent and important reproducible outcome measure. However, even normative birth weight is a moving target. Similar to the increases in both adolescent and adult populations, there has been a significant increase in birth weight in the last decade being reported in both European and U.S. populations; increased maternal obesity being the greatest risk factor. As obstetricians, most of us are aware of the perinatal risks of maternal obesity and fetal macrosomia. However, in the last 15 years there has been an increasing awareness of the developmental origins of adult disease or fetal programming, defined as the process whereby a stimulus in utero established a permanent response in the fetus leading to an enhanced susceptibility to later disease. In the situation of maternal obesity and fetal macrosomia, there are longitudinal studies demonstrating an increased risk of obesity and the metabolic syndrome in adolescents of obese women, thereby perpetuating a vicious cycle.

Future efforts will very soon be needed to assess the available data to achieve realistic recommendations for weight gain during pregnancy. Possibly, large prospective observational studies such as the National Children’s study in the United States will be able to provide much needed information. In the meantime, what is the recommendation for the obstetrician when 60% of the patients are overweight today? Because almost 50% of women gain greater than the IOM recommendations for weight gain during pregnancy (based on the current information), encouraging pregnant women to stay within the current guidelines alone will be a significant challenge. A balanced diet with low, simple sugars and saturated fats coupled with a moderate exercise regimen, such as regular walking or swimming, should be advised for the otherwise healthy woman. A consult with a registered dietician familiar with the nutritional needs of pregnant women may be of particular help with dietary advice for obese women. Because many general obstetrician–gynecologists are the primary health care providers, encouraging attainment of ideal body weight before pregnancy through responsible lifestyle measures is a laudable, albeit difficult, goal. Additionally, an opportunity that has been relatively overlooked is the issue of postpartum weight reduction, at least to the level of a woman’s prepregnancy weight, so as not to compound the problem of increasing prepregnancy weight with successive pregnancies. As an example, supporting increasing participation and length of breastfeeding has both maternal and neonatal advantages to weight control. The problem of obesity in our society will not be solved by the obstetrician–gynecologist; it is a public health issue. However, as health care providers to young women, we are in a unique position to affect both short- and long-term risks and morbidities for our patients and families at a time when they may be most amenable to alterations in lifestyle.

REFERENCES