Women's Health Considerations for Lipid Management

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KEYWORDS

• Women's health • Lipids • Dyslipidemia • Hypertriglyceridemia

KEY POINTS

- Understanding opportunities to reduce dyslipidemia before, during, and after pregnancy has major implications for cardiovascular disease risk prevention for the entire population.
- The best time to screen for dyslipidemia is before pregnancy or in the early antenatal period after pregnancy is diagnosed.
- The differential diagnosis of hypertriglyceridemia in pregnancy is the same as in nonpregnant women with the exception that clinical lipidologists need to be aware of the potential obstetric complications associated with hypertriglyceridemia.
- Dyslipidemia discovered during pregnancy should be treated with diet and exercise intervention, as well as glycemic control if indicated.
- A complete lipid profile assessment during each trimester of pregnancy is recommended.

INTRODUCTION

Although, in general, reducing atherosclerosis and preventing cardiovascular disease (CVD) require the practice and prevention of universal principles common to both genders, the diagnosis and treatment of lipid disorders in women pose unique challenges. Dyslipidemia and sequelae such as atherosclerosis are disease processes that can also affect offspring during a pregnancy and produce long-term comorbidities for both the mother and the child.[1] Acknowledging the principle that lipid awareness is critical throughout the life of the individual is paramount for modern clinical lipidologists. This article discusses some unique women's health issues that are important in lipid management because of the epidemic of obesity in society. Practitioners caring for women of reproductive age are in ideally placed to work toward improving atherosclerosis development for the entire population through examining and controlling lipid levels during gestation.[1]

CVD caused by atherosclerosis of the vessel wall is caused by multiple interrelating factors. Some of the factors relate to lifestyle and are modifiable; others are nonmodifiable. In most women, CVD is recognized an average of 10 years later than in their male counterparts, which leads to an inadvertently decreased emphasis on atherosclerosis prevention in women. Given that most women's health care is practiced by primary care physicians, clinical lipidologists must have a working knowledge of issues important for managing dyslipidemia for women. Recognition of high-risk areas and how

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lipids are affected by major reproductive issues affecting women's health should be areas of high priority for these physicians.

Understanding opportunities to reduce dyslipidemia before, during, and after pregnancy all have major implication for CVD risk prevention for the entire population. Understanding how contraceptive and hormone choices affect clinical lipid management for women is also essential.

DETECTION, MANAGEMENT, AND TREATMENT OF DYSLIPIDEMIA IN PREGNANCY

Lipid Values in Normal and Abnormal Pregnancies

Fig. 1 shows the average circulating values of total cholesterol, low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and triglycerides (TG) measured in normal women followed before, during, and after pregnancy in a large cohort of women proceeding through normal pregnancy and delivery. Most of the women are of young reproductive age and as such their values before pregnancy are in the normal range for nonpregnant women. Clinical lipidologists need to understand the pattern throughout pregnancy. Note that in the first trimester, depicted as months since conception, early in gestation there is a noticeable decrease in levels in the first 6 weeks and then a noticeable increase easily discerned by the third month or the end of the first trimester. There begins a steady increase throughout pregnancy in the major lipoprotein lipids. By the third trimester of pregnancy, levels peak to maximize near term.[2] Lipid metabolism favors proper fuel for the fetus and the natural increase reflects the increasing insulin resistance for the mother as pregnancy progresses through term. Also note that the values noted here do not exceed 250 mg/dL at any time during pregnancy.

Contrast the sequential average fasting lipid and lipoproteins measured in the different population shown in Fig. 2.

Fig. 2 shows the increase in mean lipid levels referred to in Fig. 1; however, these measurements also include persons who have complicated pregnancies. Also displayed are the values of triglycerides and total cholesterol seen increasing to term as well; however, average values exceed 300 mg/dL.[3] There is a significant increase in triglyceride content in all circulating lipoprotein fractions in pregnancy.[4]

Assessment of normal values should include specifics of the relevant trimester of pregnancy. When values exceed 250 mg/dL this should alert the clinical lipidologist that an abnormal or complicated pregnancy is underway.

Fig. 3 shows first trimester maternal triglyceride relationships.

Triglyceride levels exceeding 250 mg/dL during pregnancy are associated with complications of pregnancy-induced hypertension, preeclampsia, gestational diabetes, and large-for-gestational-age babies.[5]

Optimum Strategies for Detection and Treatment of Dyslipidemia in Pregnancy

Many women have significant undiscovered dyslipidemia before pregnancy. The dyslipidemia is often associated with conditions that make them

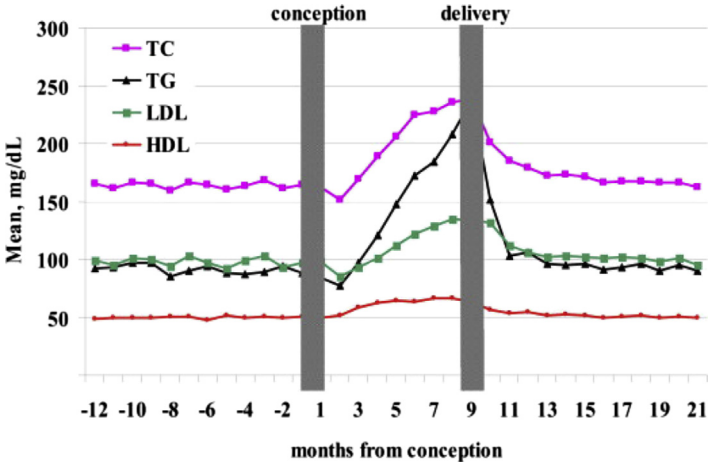

Fig. 1. Total cholesterol (TC), triglycerides (TG), high-density lipoprotein (HDL), and low-density lipoprotein (LDL) 1 year before, during, and after pregnancy. (*From* Wiznitzer A, Mayer A, Novack V, et al. Association of lipid levels during gestation with preeclampsia and gestational diabetes mellitus: a population-based study. Am J Obstet Gynecol 2009;201(5):482.e1–8; with permission.)