Pregnancy History is Critical in Our Female Patients

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Cardiovascular disease remains the leading cause of death amongst women [1]. Pregnancy reflects a time of significant cardiovascular stress during a woman’s life, with associated significant hemodynamic changes that can exacerbate underlying cardiovascular disease (CVD) or un-mask previously unknown CVD conditions. Women are now advancing in age prior to conception and entering childbearing years with a higher incidence of CVD conditions and risk factors. In turn, pregnancy complications and other reproductive conditions can pre-dispose to future cardiovascular risk. Thus, it is important to recognize pregnancy and reproductive history, as this can also serve as an important window into future cardiovascular disease risk.

Pregnancy is associated with dramatic changes in cardiovascular physiology that are adaptations which develop to account for the growing fetus. There are significant increases in stroke volume, cardiac output, and heart rate, and a decline in systemic vascular resistance, which are all dynamic throughout pregnancy in addition to a host of metabolic changes. Also, there are changes leading to an increase in a hypercoaguable state and obvious changes in hormones. All of these changes can manifest in various forms within the cardiovascular system, but they are known to be associated with the development of adverse pregnancy outcomes (APOs). A variety of APOs can develop, including hypertensive disorders of pregnancy, including pre-eclampsia, preterm birth/small for gestational age, and gestational diabetes. These APOs can impact the baby. However, there are multiple implications for future maternal health, as these conditions are associated with an increased risk of long-term CVD. This can manifest in various ways, including heart failure (both reduced and preserved EF), arrhythmias, and premature atherosclerotic disease. Data has shown that these events can occur as early as 5–10 years after pregnancy and that the risks continue to increase with age and transition to the peri-menopausal period [2].

Awareness of pregnancy history creates opportunities for earlier, more aggressive risk assessment, and risk modification. If a patient has a known history of APOs, they should be screened routinely and more often than recommended in the age-related guidelines. Screening should include yearly blood pressure, lipid, and diabetes. For instance, a young woman in her thirties may not typically warrant yearly lipid screening; however, due to the heightened risk of CVD with a history of pre-eclampsia, this patient would warrant yearly CVD risk assessment and screening. Additionally, a history of APOs can serve to better streamline CVD risk mitigation strategies. The American Heart Association guidelines [3] for CVD prevention advocate the use of APOs as “risk enhancers” in assessing indication for statin therapy in women with borderline CVD risk. Also, they suggest that a further risk assessment may be warranted using coronary computed tomography angiography.

Pregnancy history should include a detailed evaluation of prior pregnancies, an evaluation of the occurrence of APOs, as well as manifestations of
underlying CVD, to guide future pregnancy planning. APOs may become quiescent after pregnancy but may re-appear and worsen in severity in subsequent pregnancies; for example, conditions such as pre-eclampsia may be mild in an initial pregnancy but then occur earlier and have more severe manifestations in subsequent pregnancies. The same can be true for CVD conditions. The majority of CVD conditions during pregnancy can be safely managed through another pregnancy but need careful and thorough cardio-obstetrics team planning to discuss medication adjustment, surveillance/imaging if indicated, mode and timing of delivery, etc. Certain CVD conditions, such as pulmonary hypertension and peripartum cardiomyopathy, are at a severely elevated risk and warrant consideration of definitive contraception due to elevated intrapartum risk, which makes pregnancy prohibitive.

Many women are older at the time of conception and the use of assisted reproductive technologies is increasing. When conducting a case history in a woman, it should extend beyond pregnancy history and include reproductive health history, age at menarche, fertility history including use of assisted reproductive technology (ART), history of other conditions that may impact fertility, such as polycystic ovarian syndrome (PCOS), and the age of menopause specifically evaluating for signs and evidence of premature menopause, particularly due to ovarian failure.

It is imperative that pregnancy history is obtained routinely by women’s health providers, such as obstetricians and gynecologists, and also by primary care providers. Many of these women are young and otherwise healthy and, on the surface, may not appear to be at an elevated risk of CVD. However, APO and pregnancy history can be a clue to guide more attention to risk assessment and stratification. Unfortunately, not all primary care providers are aware of the association between APOs and CVD risk [4]. As these patients will be managed chronically by a wide spectrum of care providers, it is imperative to improve the dissemination of information to explain the importance of taking a pregnancy history across disciplines and provider types. Obstetrics and gynecology clinics also serve as an important touch point to capture such data. Many women seek care mostly or exclusively from these providers and initiatives have sought to capture such pregnancy history and CV symptom data outside of traditional PCPs [5].

Conflict of interests

The author declares no conflict of interests.

REFERENCES