

Hypertensive Disorders in Pregnancy and the Risk of Cardiovascular Disease: A Need for Postpartum Strategies for the Primary Prevention

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Worldwide, hypertensive disorders in pregnancy (HDP) affect up to 1 in 10 pregnancies. Just over a decade ago, globally, these disorders were causally associated with up to 14% of all maternal deaths. In the United States, during 2011 to 2013, about 7.4% of all maternal deaths were attributed to HDP. These statistics, rightfully, prompted several changes in healthcare practices, with the adoption of evidence-based, protocol-driven screening and management programs during pregnancy. These changes, together with increased awareness of the risks, resulted in a substantial reduction in the number of maternal deaths in the western world to the extent that, presently, age-matched maternal mortality is no different from the corresponding death rates in males.

This success has, however, brewed some complacency. Often it is ignored that the manifestation of HDP, and other pregnancy-related complications (such as small-for-gestational-age infants and/or preterm delivery), also confers considerably increased risk for future well-being and cardiovascular health. Therefore, it is critical that the management of HDP and pregnancy-related complications should not stop after a successful outcome of the pregnancy. Indeed, postpartum, these high-risk patients should be followed up regularly with the adoption of innovative pathways (or programs) to screen for risk factors of cardiovascular disease and related morbidity. An educational strategy can be built into such programs to reduce the lifetime risk of cardiovascular disease. Currently, no such pathways exist for these patients.

These high-risk patients have been brought to our attention, by nature's unique "stress" test in the form of pregnancy, many years before when they would have been apparent using the traditional risk-factor approach. It is vital that we make the best use of this cost-free, early detection system, and

take steps to reduce/mitigate the lifetime cardiovascular disease risk of these patients.

In this issue of the *Journal of the American Heart Association* (JAHA), and others to follow, we have highlighted the importance of identifying the high-risk women who manifest during pregnancy with hypertensive disorders or other pregnancy-related complications. Egeland and colleagues in their analyses of 60 000 pregnancies (among prepregnancy normotensive women) have illustrated that, after accounting for other traditional risk factors, up to 28% of all patients with new-onset hypertension can be causally attributed to the presence of the pregnancy-related risk factors.¹ In another Norwegian cohort, Riise and colleagues have shown that the presence of gestational hypertension is associated with up to a 2-fold increased risk of cardiovascular disease during 14 years of postpartum follow-up, and that this risk is increased severalfold in the presence of concomitant pregnancy-related complications.² Scantlebury and colleagues have demonstrated the risk of cardiovascular morbidities, such as atrial fibrillation, associated with the presence of HDP about 3 decades ago.³

In this series, all authors have voiced a similar message (ie, an urgent need to commence [and institute] a structured postpartum program targeting these high-risk women who were identified during pregnancy). Further studies are needed regarding whether or not intervention at this stage in life with education and/or screening programs will bestow significant lifetime cardiovascular health benefits.

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