Editor's memo

The Uneasy Conversation

The conversation never comes easily as I counsel a young woman with newly-diagnosed pulmonary arterial hypertension (PAH) about the extreme risks of pregnancy. In that moment, I know I've shattered a life-long dream. Despite the many medical advances in the field of pulmonary hypertension, pregnancy and PAH remain a lethal combination. And, in a disease that affects more women than men, most experts believe that hormonal influences play a key role in the pathophysiology of the disease; however the exact mechanisms remain unclear. In this issue of *Advances*, guest editors Drs Kelly Chin and Deborah Levine call on authors to address this delicate topic. Dr Dianne Zwicke's article provides readers with a review of the normal physiology of pregnancy and highlights the pathophysiological derangements that make pregnancy so dangerous for women with Group 1 PAH. Given the risks of pregnancy to both mother and fetus, including potential teratogenic effects of some of the targeted PH agents, Dr Patricia Santiago-Munoz also provides a comprehensive review of contraceptive options for women with PAH. In Dr Eric Austin's article about sex hormones and PAH, the reader can learn about potential mechanisms of hormonal influences in PH. Finally, in the roundtable discussion, experts discuss controversies surrounding the topic of pregnancy and PH. All acknowledged that while pregnancy can be fatal and should be avoided in women with PAH, management guidelines should still be developed for practitioners who find themselves caring for a woman presenting with PAH during pregnancy. Another key message that emerged from this discussion was that the management requires a multidisciplinary team of experts with experience taking care of PH patients at a major medical center, as these patients require meticulous monitoring through all stages of pregnancy including the early post-partum period for sudden cardiovascular collapse. One can only hope that in the future we will have a better understanding of these hormonal influences, which may uncover potential therapeutic targets, and that we may be able to counsel women with PAH differently. Until then, despite the many advances in management of PAH, the conversation remains sobering.

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Guest editors' memo

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Although pulmonary hypertension is not a uniquely female problem, women living with pulmonary hypertension often have female-specific concerns; such as, whether they should get pregnant; what types of contraception are safe and effective in PH; and whether routine health-maintenance care and exams are necessary. Separately, the increased incidence and prevalence of pulmonary hypertension in women vs men has led to considerable discussion over the years as to the role for sex hormones in the pulmonary vasculature and in the development of pulmonary hypertension.

It is, therefore, with great pleasure that we present this issue of *Advances in Pulmonary Hypertension* in which "Women's Issues" are discussed from both perspectives. Dr Austin's article, "Gender, Sex Hormones, and Pulmonary Arterial Hypertension" starts off with a comparison of the female:male gender ratios in pulmonary hypertension as shown in large observational studies such as the REVEAL registry. He follows this with a presentation of the evidence for and against a connection between sex hormones and pulmonary hypertension, ending with an overview of his own very interesting work looking at whether certain estrogen *metabolites* are associated with familial forms of PH.

Dr Munoz-Santiago, a maternal-fetal medicine specialist, writes on "Contraceptive Options for the Patient with Pulmonary Arterial Hypertension." Her review reminds us of the highly concerning maternal *and* fetal morbidity and mortality that are seen even in recent pulmonary hypertension case series, and provides a strong rationale for encouraging the use of highly-effective birth control in all women with pulmonary hypertension.

Next, because some patients with pulmonary hypertension *may* become pregnant despite medical advice, or present during pregnancy, our last article focuses on cardiopulmonary physiology during a normal pregnancy and the changes seen in PH. This is then followed by a roundtable discussion on the care for patients with PAH during a pregnancy.

Finally, so as not to ignore the men completely in this issue, Dr Williamson discusses two "Men's Issues" in his guest coverage of the Ask the Expert column.

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