IVF and The Risk of a Broken Heart

By Dr. Sarah Običan, OBGYN, MotherToBaby

It's noon. I just ran into my academic office to call back a few patients in between a packed schedule. I just spent my morning seeing 17 patients and gauging by my afternoon schedule, the day was not going to get much easier. I was new at my job as an OBGYN having joined the academic practice where I completed my residency. It was a busy practice, but I loved my job and I loved my patients. As I sat in my chair, I finally felt my feet again and realized they were hurting, but before I could kick off my heels, my cell phone rang. It was my IVF doctor.

By this time, my husband and I had been dealing with infertility for over a year and had decided to have tests done by one of my medical partners. She phoned to give me results of my testing…. As it turns out a hormone, called anti-mullerian, was low. It may have been in part a cause to our inability to conceive naturally. I could not muster a response to her. Instead – silence. A whole minute must have passed, after which all I said to my doctor was "I must be one of the 10%."

I was not alone.
According to a CDC survey from 2006 – 2010, more than ten percent of couples trying to conceive have infertility. It's a medical problem that impacts entire families, marriages and your work. The journey is long, time intensive, costly, emotionally heavy with so much joy and pain all wrapped up into a six week treatment cycle. It's not for the faint of heart.

Since the first IVF conceived child was born in 1978, things have changed. In fact, even in the 3 year period and 11 cycles I went through in my own life things have changed. We are learning so much about new technologies and improving outcomes. We're able to offer patients better risk assessments and counseling today.

Is IVF safe?
All things considered, assisted reproductive technologies (ART) are safe and the studies are proving it. Multiple studies have supported that IVF does not increase your risk of breast cancer or cancer overall. However, pregnancy conceived by ART are at increased risk of multiples, including monochorionic twins (when twins share the same placenta). These types of twins do carry increased risk of birth defects, preterm labor and delivery.
On average, women necessitating these medical interventions tend to be older and may have additional medical issues, all which impact the pregnancy.

For the baby, while we do know any risk of birth defects is low, some studies do show a small increased risk of overall birth defects, specifically heart defects, in IVF-conceived children, including a 2012 Australian study that looked at more than 6000 children conceived by using ART. It's hard to completely understand if the risk is due to the interventions itself or due to any underlying issues the higher-risk patients being studied carry.

The formation of a baby's heart is an exceptionally complex biological process. Because of this, it's not surprising that, of all birth defects, heart defects tend to be most common. Similarly, the infertile population and those who undergo ART have an increased risk of having a baby with a heart defect, specifically defects affecting the ventricular and atrial septum, as well as a complex birth defect called Tetralogy of Fallot. All women with an ART conceived pregnancy should have a detailed ultrasound between 18-22 weeks to evaluate fetal anatomy and a fetal echocardiogram to evaluate for heart defects. Folic acid supplementation is also important.

Drawbacks to the studies
Despite 60,000 infants being born in the U.S. using ART, the vast majority of studies investigating the associated risk with ART have studied a population which conceived and delivered outside of the U.S. Other limitations of the early studies include looking at relatively small numbers of patients. As a doctor, I hope more studies will be conducted examining U.S. pregnancies involving ART since we have such a diverse population. Studying IVF among our differing ethnicities, age and socioeconomic backgrounds will help doctors make even better recommendations to the couples trying exhaustively to start their families.

For now, just breathe…
I did. Chin up, support system intact, I kept forging ahead. With each failed IVF attempt along the way, my heart may have broken a little, but, at least the absolute risk of heart defects in the potential pregnancy remained small. Three

years of trying and my son finally arrived. My heart is now full.

Sarah G. Obican, MD, is an OBGYN, Maternal Fetal Medicine specialist at the University of South Florida. She currently serves on MotherToBaby's Board of Directors. She's also a councilmember of MotherToBaby's sister society, the Teratology Society.

MotherToBaby is a service of the international Organization of Teratology Information Specialists (OTIS), a suggested resource by many agencies including the Centers for Disease Control and Prevention (CDC). If you have questions about alcohol, medications, vaccines, diseases, or other exposures, call MotherToBaby toll-FREE at 866-626-6847 or try out MotherToBaby's new text counseling service by texting questions to (855) 999-3525. You can also visit MotherToBaby.org to browse a library of fact sheets.

References:

http://www.cdc.gov/nchs/fastats/infertility.htm

Davies MJ, Moore VM, Willson KJ, Van Essen P, Priest K, Scott H, Haan EA, Chan A. Reproductive technologies and the risk of birth defects. N Engl J Med. 2012 May 10;366(19):1803-13.

Olson CK1, Keppler-Noreuil KM, Romitti PA, Budelier WT, Ryan G, Sparks AE, Van Voorhis BJ.
In vitro fertilization is associated with an increase in major birth defects. Fertil Steril. 2005 Nov;84(5):1308-15.

Hansen M1, Kurinczuk JJ, Milne E, de Klerk N, Bower C. Assisted reproductive technology and birth defects: a systematic review and meta-analysis. Hum Reprod Update. 2013 Jul-Aug;19(4):330-53.

Kelley-Quon LI, Tseng CH, Janzen C, Shew SB. Congenital malformations associated with assisted reproductive technology: a California statewide analysis. J Pediatr Surg. 2013 Jun;48(6):1218-24.

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at MotherToBaby.org.