

Pregnant with a heart condition: A challenge for mother and fetus

Laura Markovic discovered she had a heart rhythm disorder at age 33, a diagnosis that she says “flipped my life upside down”

LAURA MARKOVIC HAS ALMOST ALWAYS BEEN ON THE MOVE. “I’ve played competitive soccer since I was four. I was on my high school’s volleyball, field hockey, ski and soccer teams. I had backpacked through 32 countries and all seven continents before the age of 33.”

Even welcoming her first baby into the world in 2011 did little to slow Ms. Markovic down.

“I worked out regularly and walked the dog with my daughter 10 kilometres a day.”

Then in 2013, everything careened to a stop. “I went from being a very active person to a couch potato in one day,” says the wife and mother from Bowmanville, Ont.

That jolting halt was the result of an unexpected medical diagnosis. At 33 years of age, Ms. Markovic was told she had a rare, irregular heartbeat – a genetic condition exacerbated by activity. She was under strict doctor’s orders to keep her heart rate down. “The harder my heart had to work, the greater the chance I had of progressing my disease. I wanted to be that active mom, but I wasn’t allowed. I wanted to continue to travel the world but was too scared to do so. The diagnosis flipped my life upside down.”

Her “new normal” came with one important silver lining: “I did get the ‘go ahead’ to have more kids.”

While her first pregnancy was relatively “uneventful,” the second was anything but. “I didn’t realize how hard it would be. I felt more palpitations, was more out of breath, exhausted and noticed my heart rate was quite elevated when doing minimal activity. It was scary not knowing what was going on and not knowing what



to expect.”

Now considered a high-risk pregnancy patient, Ms. Markovic was referred by Dr. Jason Burstein and Dr. Bhavi Makanjee, two cardiologists from the Heart Health Institute in Ajax, Ont., to Toronto’s Mount Sinai Hospital and the Peter Munk Cardiac Centre (PMCC). In early December 2014, five months pregnant with her second baby, she met Dr. Danna Spears, a cardiac electrophysiologist at the PMCC, for the first time.

“She [Dr. Spears] sat down with me and patiently answered every question and concern that I had. She explained how I would have regular checkups with her at every trimester and explained how I would be monitored during labour and delivery. If I had any

questions or concerns during the rest of my pregnancy, I could e-mail her directly, which was amazing,” says Ms. Markovic.

“The needs of patients with inherited arrhythmias in pregnancy are diverse. Most women are at relatively low risk and can safely navigate pregnancy, labour and delivery. Some women need more advanced care and monitoring throughout. The greatest challenge is managing the unknown,” says Dr. Spears.

Inherited arrhythmias or heart rhythm disorders that are genetically passed on often manifest without any pronounced symptoms, and they can escalate quickly to a rapid heartbeat, a loss of consciousness and even sudden death. For pregnant women, an inherited arrhythmia poses an

even greater risk to both mother and fetus.

“Many women living with these heart conditions are apprehensive about the safety of starting a family, how they would manage pregnancy, labour and delivery, and what it would mean for their babies. Our objective is to safely transition them through this phase of their lives,” says Dr. Spears. “In addition, genetic counselling, medical consultation prior to conception and direct affiliation with the inherited arrhythmia program at SickKids after the baby is born help to ensure that these infants receive clinical and genetic testing, as appropriate.”

Since opening in 2012, the Heritable Arrhythmia Clinic at the PMCC has cared for more

than 1,200 patients and screened their families. Each patient is seen by a team of three PMCC cardiologists, led by Dr. Spears, specializing in the electrical functioning of the heart.

“Our team actively follows more than 200 women of child-bearing age within this clinic, underscoring the need for reproductive care. As such, there is close collaboration with the high-risk obstetrics program at Mount Sinai and the pediatric cardiac program at SickKids,” adds Dr. Spears.

Seven months into her pregnancy, the palpitations, increased heart rate and shortness of breath were taking a toll on Ms. Markovic. A feared blood clot was quickly ruled out. Then she was put through an array of tests (an electrocardiogram to check the heart’s electrical activity, as well as an echocardiogram to

see images of the beating and pumping action of the heart). She was then fitted with a Holter monitor – a portable device worn for a fixed period of one, two or three days to record the heart’s rhythm during regular activity and during sleep. Ms. Markovic also had her implantable cardioverter defibrillator (ICD) checked and her medication (beta blockers, which are used to treat a host of heart-related conditions, including heart failure, high blood pressure, angina, heart attack and irregular heartbeats) dosage increased.

The treatment protocol and close monitoring by Dr. Spears and staff helped lead to a final two months of pregnancy for Ms. Markovic free of complications.

“I finally went into labour on April 9, 2015, at Mount Sinai. Dr. Spears, again, was in constant contact with the team at Mount Sinai. Two days later, I delivered a healthy baby boy, without any complications.”

“The rarity of these conditions and the lack of these types of specialized clinics around the world make research in this field

challenging. Collaboration with the University of Toronto Heart Disease and Pregnancy Program brings together many important facets – cardiology, genetics, electrophysiology, maternal-fetal medicine and pediatrics – in a way not seen anywhere else in the world,” says Dr. Spears.

“My kids have a 50-per-cent chance of inheriting this heart condition,” says Mr. Markovic. “My genetics tests didn’t test positive for any of the current identified gene mutations, so we wait and see. In the meantime, I let my kids be kids, let them play whatever sport they like. And if we learn one day that they may have it, then SickKids and the PMCC will be there to help guide us through it.”

Ms. Markovic is now back at work following her maternity leave and armed with a whole new perspective, both as a patient and as a professional. “I’m surprised how much stronger this diagnosis has made me, not physically, obviously, but mentally. Once I accepted my new normal, I’ve tried to turn it into a positive. I work as a physiotherapist at the

Complete Performance Centre in Ajax. We treat and train a variety of athletes, from professionals to weekend warriors. I tell my story frequently, trying to educate as many athletes and parents as I can. I once told my story to a marathon runner I was treating. She told me her story. I urged and begged her to get a third opinion. One year later, she came back to thank me. She got that third opinion, had two ablations and was waiting to get an ICD. My story made a difference in someone’s life and I’m thankful for that.”

Even more important is Ms. Markovic’s prognosis.

“In August [2016], during my follow-up tests with Dr. Spears, there has been no progression of my disease since being diagnosed in 2013, even after carrying my baby boy for nine months!” she says. “I’m now allowed to do some lower-intensity activities like riding a bike with my kids, going tobogganing, swimming, skiing and playing tag. I just have to keep my heart rate below 130 [beats per minute]. But that’s better than nothing!”

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