

Fetal heart rate monitoring can help manage high-risk pregnancies

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New research presented this week at ACR Convergence, the American College of Rheumatology's annual meeting, shows that heart rate monitoring is a feasible, accurate tool to check for heart rhythm abnormalities in the fetuses of pregnant women with anti-Ro/SSA antibodies.

Women with anti-Ro/SSA antibodies are at increased risk for pregnancy complications, including congenital heart block. Anti-Ro/SSA antibodies may be present in rheumatic diseases like systemic [lupus](#) erythematosus, also known as SLE or lupus, and Sjögren's syndrome.

Congenital heart block occurs in about 2% of pregnancies of women with anti-Ro/SSA antibodies, and it carries a serious risk of fetal illness or death. Almost all survivors of congenital heart block need a pacemaker device for life. There is data that suggest that anti-inflammatory treatment of congenital heart block in earlier stages can prevent progression to complete block, but doctors are still looking for the optimal strategy to detect rapidly worsening and potentially irreversible conduction disease. This study evaluated the fetal heart rate and rhythm technique, or FHRM, in high-risk mothers for feasibility, acceptance and accuracy.

"Unfortunately, when heart block is complete, it does not reverse. However, there may be a time frame during which the block is not complete, and therapy would be effective. The goal of this study was to empower women to be able to detect an abnormality in their baby's [heart rate](#) or rhythm that can be rapidly treated with the hope of reversal," says Jill P. Buyon, MD, a rheumatologist at NYU Langone Health and the study's senior author. Current strategies to monitor women with anti-Ro/SSA antibodies involve weekly or biweekly monitoring by echocardiography. "By the time a problem is identified, it may be permanent. This study also aims to show that not all mothers with anti-SSA/Ro need intense monitoring, but only those who have very high levels of the antibodies."

Mothers who agreed to be included in the current study all were positive for anti-Ro/SSA antibodies and were stratified into two groups: High and low titers of anti-Ro60 and anti-Ro52. The threshold for high titer was defined as either anti-Ro60 or anti-Ro52 antibodies at or above 1,000

I.U. based on evaluation of 50 other mothers in the NYU Research Registry for Neonatal Lupus who had previously delivered a baby with congenital heart block.

Mothers with anti-Ro60 or anti-Ro52 antibodies above the high-risk threshold were trained to perform FHRM with an educational video and personal instruction from a pediatric cardiologist on how to use the monitor. From weeks 17 to 25 of their pregnancies, they performed FHRM three times daily, in addition to having weekly or biweekly fetal echocardiograms. They texted their FHRM results to a data monitoring center. If the mother perceived an abnormality, they were immediately referred to a fetal echocardiogram if necessary. After delivery, all babies had electrocardiograms and were evaluated for congenital heart block.

Thirty-seven mothers performed FRHM for the study, sending a total of 3,360 audiotexts for evaluation. There were 39 recordings sent from five mothers who were concerned, prompting an immediate consult from a cardiologist. All but two recordings were normal, and in both cases, an emergency echocardiogram was performed within six hours. Both cases involved premature atrial contractions that confirmed the abnormal FHRM result, but no evidence of conduction disease. Follow-up echocardiograms were normal. There were no cases of congenital [heart](#) block at birth for any babies in the study.

"By providing [mothers](#) with the ability to monitor their own fetuses, we hope that there will be greater confidence in managing pregnancy and that abnormalities can be identifiable when treatment can be effective," says Dr. Buyon. "It is possible that home monitoring can decrease the number of echocardiograms, also unburdening the mother with regard to frequent visits to their pediatric cardiologists."

More information: Mala Masson et al, Ambulatory Fetal Heart Rate Monitoring (FHRM) to Surveil Pregnancies at Risk for Congenital Heart

Block [abstract]. *Arthritis Rheumatology* (2021). Available at [acrabstracts.org/abstract/ambu ... genital-heart-block/](https://acrabstracts.org/abstract/ambu...genital-heart-block/)

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