

Contemporary OB/GYN

How AI is revolutionizing prenatal detection of congenital heart defects

January 30, 2025

By Celeste Krewson, Assistant Editor

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Artificial intelligence-powered ultrasound analysis is enhancing the early detection of congenital heart defects, improving diagnostic accuracy, physician confidence, and neonatal outcomes.



In a recent interview with *Contemporary OB/GYN*, Jennifer Lam-Rachlin, MD, a maternal-fetal medicine specialist and director of fetal echocardiography at Carnegie Imaging for Women, discussed the role of artificial intelligence (AI) in improving the detection of major congenital heart defects (CHDs).

CHDs are among the most common birth defects, affecting approximately 1% to 2% of live births, with significant implications for newborn mortality and morbidity. Early prenatal detection dramatically improves outcomes, yet the global prenatal detection rate remains low at 30% to 50%, leading to thousands of missed diagnoses annually.

One of the primary reasons for this low detection rate is the shortage of trained specialists who can effectively screen for CHDs during routine prenatal ultrasounds. Many ultrasound screenings are conducted by physicians without extensive training in fetal heart examinations. Lam-Rachlin's study investigated the potential of AI-powered software to assist in



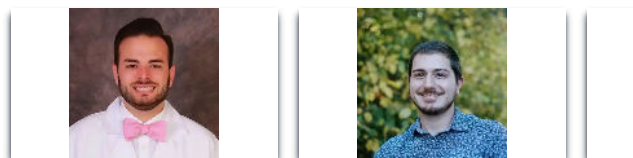
the identification of suspicious findings in ultrasound clips, helping both general OB-GYNs and maternal-fetal medicine specialists (MFM) improve detection rates.

She emphasized that AI is not intended to replace physicians but rather serve as a supportive tool to enhance diagnostic accuracy and efficiency. The study found that AI assistance not only improves detection rates but also boosts physicians' confidence in their diagnoses while reducing the time required for evaluations, which is an essential benefit in busy clinical settings.

To further advance AI in prenatal diagnostics, Lam-Rachlin highlighted the need for real-world clinical implementation and prospective studies to assess AI's effectiveness in everyday practice. Future research should focus on its impact on efficiency, accuracy, and ultimately, neonatal outcomes. With the AI program now FDA-approved, conducting such studies has become more feasible. Her team has already begun a pilot study at their center to explore AI's clinical utility.

In closing, Lam-Rachlin expressed optimism about the increasing acceptance of AI in medical practice and anticipates significant advancements in the coming years. She believes AI will play a transformative role in prenatal diagnostics, improving patient outcomes and streamlining clinical workflows.

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