AI models have higher accuracy for estimating gestational age

January 5 2023

Artificial intelligence (AI) models based on standard plane

ultrasonography images and fly-to ultrasonography videos have higher accuracy for estimating gestational age compared with manual fetal biometry measurements, according to a study published online Jan. 4 in *JAMA Network Open*.

Chace Lee, from Google Health in Palo Alto, California, and colleagues used AI to interpret standard plane ultrasonography images and fly-to ultrasonography videos to improve gestational age estimates. Three AI models were developed and validated: an image model using standard plane images, a video model using fly-to videos, and an ensemble model combining image and video models. Training and evaluation of the models were conducted on data from the Fetal Age Machine Learning Initiative cohort. Data were calculated for a test set of 404 participants.

The researchers found that all models were statistically superior to standard fetal biometry-based gestational age estimates derived from expert sonographer-captured images. The lowest mean absolute error was seen for the ensemble model compared with the clinical standard fetal biometry (mean difference, −1.51 days). On fetuses that were predicted to be small for their gestational age, all three models outperformed standard biometry by a more substantial margin.

"Since our models are built on data collected during routine fetal ultrasonography examinations, they have the potential of being incorporated seamlessly into the routine clinical workflow," the authors write.

More information: Chace Lee et al, Development of a Machine Learning Model for Sonographic Assessment of Gestational Age, *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2022.48685

2023 HealthDay. All rights reserved.

Citation: AI models have higher accuracy for estimating gestational age (2023, January 5) retrieved 20 April 2024 from https://medicalxpress.com/news/2023-01-ai-higher-accuracy-gestational-age.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.