AI model identifies women at high risk for gestational diabetes

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Artificial intelligence can effectively identify women at high risk for gestational diabetes during the first trimester, allowing treatment to begin at an earlier stage of the disease, according to a study published Tuesday by the Endocrine Society's Journal of Clinical Endocrinology Metabolism.

Researchers in China used machine learning, a form of AI, to develop a model that can predict whether women will develop the disease about 80 percent of the time.

The model analyzes data from electronic health records, flagging known risk factors for gestational diabetes, including older maternal age and very low maternal weight, the researchers said.

"Our study leveraged artificial intelligence to predict gestational diabetes in the first trimester using electronic health record data from a Chinese hospital," study author He-Feng Huang said in a statement.

"These findings can help clinicians identify women at high risk of diabetes in early pregnancy and start interventions such as diet changes sooner," said Huang, a researcher at the Shanghai Jiao Tong University School of Medicine and the International Peace Maternity and Child Health Hospital in China.

Gestational diabetes is a common complication during pregnancy that affects up to 15 percent of expectant mothers, according to the American Diabetes Association.

High blood sugar levels in the mother can be dangerous for the baby and lead to problems such as stillbirth and premature delivery.

Most women are diagnosed with gestational diabetes during the second trimester, meaning treatment may be started too late to avoid these potential complications, the researchers said.

However, some women are at particularly high risk for the disease and may benefit from earlier intervention, they said.

For this study, the researchers analyzed the electronic health records of nearly 17,000 of women treated at a hospital in China in 2017, using machine learning models designed to predict those at high risk for gestational diabetes based on the presence of risk factors.

They compared the model's predictions with 2018 electronic health record data and found they were successful at identifying who would develop gestational diabetes up to 80 percent of the time. The prediction models also found an association between high and extremely low body mass, and gestational diabetes, the researchers said.