

Procedure Predicts Embryos Most Likely to Result in Pregnancy

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To address the high rate of multiple births resulting from in-vitro fertilization (IVF), researchers at Yale School of Medicine and McGill University have developed a procedure that estimates the reproductive potential of individual embryos, possibly leading to a decrease in multiple-infant births and a higher success rate in women undergoing IVF.

Over 100,000 in-vitro fertilization procedures are performed each year in the United States. In 2002, 3.1 embryos on average were transferred in IVF cycles, but only 34.3 percent resulted in pregnancies. Of those successful pregnancies, 29 percent resulted in multiple births. These statistics remained unchanged within the last decade suggesting that an improvement is needed over the current methodology used for embryo evaluation.

The new procedure will be presented in an abstract at the Society for Gynecologic Investigation Conference in Reno, Nevada on March 16. Emre Seli, M.D., assistant professor in the Yale Department of Obstetrics, Gynecology & Reproductive Sciences led the study.

“The main reason for multiple gestations following in-vitro fertilization is the inability to precisely estimate the reproductive potential of individual embryos,” Seli said. “The successes of in-vitro fertilization often result from simultaneous transfer of multiple embryos with the hope that at least one will lead to a pregnancy.”

By comparing the content of the successful and unsuccessful embryos, the team established a metabolic profile of embryos that resulted in pregnancies as well as ones that did not.

“We found that proton NMR, a non-invasive nuclear magnetic resonance form of spectroscopy, will determine the metabolic profile of the embryo and accurately predict its reproductive potential,” said Seli, who plans to confirm the findings in a larger trial.

Other authors on the study included Denny Sakkas, Richard Scott, Lucy Botros, and David H. Burns.

Source: Yale University

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