

# Study finds that in vitro fertilization placentation may differ from normal placentation

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In a study to be presented today at the Society for Maternal-Fetal Medicine's (SMFM) annual meeting, researchers will unveil findings that show that there are distinct differences in protein detection between IVF and spontaneous pregnancies in the first half of gestation.

"Since women who have IVF pregnancies have a higher rate of complication than women with spontaneous pregnancies, we are looking for what may cause those complications," said Mervi Haapsamo, M.D., of the University of Oulu, Finland, and an author of the study.

The study was comprised of 110 women (55 IVF and 55 spontaneous pregnancies) who were recruited at the University Hospital of Oulu, Oulu, Finland between 2001 and 2006. Maternal sera were collected at 11 and 19 gestational weeks. Proteome analysis was performed using fluorescence 2-D gel electrophoreses, multidimensional liquid chromatography tandem mass spectrometry and label-free quantification. The process identified 368 unique proteins.

Protein differences between the IVF and spontaneous pregnancy patients included differences in extra-cellular matrix, cytoskeletal, vascular, complement and transport proteins; all of which are important in placentation. Most of the differences disappeared by 19 weeks; only pregnancy specific glycoprotein-1 (PSG1) remained significantly different.

"There is so much that is unknown in this area of research," said Dr. Haapsamo. "The functions of many of these proteins are unknown. Further research may help explain the root causes of adverse pregnancy outcomes associated with IVF pregnancy and suggest early, selective treatments."

Source: Society for Maternal-Fetal Medicine

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