

Hormone may help predict tubal ectopic pregnancy

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Tubal ectopic pregnancy (TEP) is currently the leading cause of pregnancy-related deaths during the first trimester and a recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM) shows that the hormone adrenomedullin (ADM) may help predict this condition.

TEP is a condition where the fertilized egg implants in the fallopian tubes instead of in the uterus. In pregnant women, cilia (small protuberances) pulsate, or beat, to propel an embryo through the fallopian tubes towards the uterus. Defects in ciliary beats and muscle contractions may predispose a woman to TEP. With rare exceptions, ectopic pregnancies are not viable, and they are also dangerous for the mother and without proper treatment, can lead to death.

"This is the first report to address the effect of ADM on cilia beat frequency and muscular contraction in the oviduct," says the lead author of this study, Wai-Sum O, PhD, of the University of Hong Kong. "We found that low ADM expression may contribute to slower muscle contraction and ciliary beating, which hampers embryo transport and favors embryo retention in the oviduct. This finding is significant because plasma ADM levels may be useful in predicting TEP."

In this study, researchers examined women who were having their <u>fallopian tubes</u> removed or were having a hysterectomy for noncancerous reasons. Each participant had tissue from their oviduct incubated in conditions to replicate the hormonal state of early



pregnancy. In the oviducts of patients who had TEP, the ciliary beats were slower, the muscle contractions were less frequent, and there were lower levels of ADM than in the oviducts from a normal pregnancy. Administering ADM reversed the retardation of ciliary beating and muscle contraction and restored them to normal levels.

"We reported for the first time a significantly reduced expression of ADM in human oviduct tissue in TEP compared to control," said O. "ADM increases cilia motility, smooth muscle tone and contraction frequency, and the reduced ADM level in TEP may contribute to its pathogenesis by impairing embryo transport."

The article, "Possible role of adrenomedullin in the pathogenesis of tubal <u>ectopic pregnancy</u>," appears in the June 2012 issue of *JCEM*.

Provided by The Endocrine Society

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