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## New study links antibiotic-use with preterm birth

Ottawa - A ground-breaking study about the cause of preterm birth and how it can be averted was published today in the *Journal of Obstetrics and Gynaecology of Canada (JOGC)*.

In studies involving over 1800 women, researchers found that certain antibiotics can effectively prevent preterm birth, which occurs in about one in ten pregnancies. Preterm birth is also the leading cause of death and illness in the perinatal period surrounding birth. The study also determined that certain antibiotics were associated with a higher rate of preterm birth.

"Preterm birth is the leading cause of perinatal death, and so far most of the strategies aimed at preventing it have failed," said Dr. Emmanuel Bujold, lead author of the study and an Assistant Professor in the Department of Obstetrics and Gynecology at Laval University. "This study is exciting because it tells us that there is more that we can do to prevent preterm birth."

The study, entitled "The Effect of Second-Trimester Antibiotic Therapy on the Rate of Preterm Birth", is a systematic review of the evidence examining links between antibiotics and preterm birth. The analysis reviewed evidence from studies involving over 1800 women deemed at a higher risk for preterm delivery, comparing the rate of preterm birth between those given antibiotics and those given placebo.

The study found that certain antibiotics were associated with a lower rate of preterm birth, while others clearly were associated with a higher rate of preterm birth. Particularly, the study found that women who were given the antibiotic clindamycin or antibiotics belonging to a group called macrolides during their second trimester were less likely to undergo preterm labour than those given a placebo.

In contrast, the study found that those given the antibiotic metronidazole were more likely to undergo preterm labour than those given placebo. Metronidazole is an antibiotic commonly used to treat bacterial vaginosis, an imbalance of bacteria in the vagina, and trichomonas, a parasitic sexually transmitted infection. Based on the findings, the study's authors recommend that the use of metronidazole should be avoided for higher risk women in the second trimester of pregnancy.

By examining the effects of individual antibiotics, the study helps to explain conflicting results found in previous studies, including large-scale trials appearing in the *New England Journal of Medicine* and the *Lancet*. Although infection of the amniotic fluid and placenta have been closely linked to preterm labour, most studies looking at the role of antibiotics to prevent it have shown no benefits. Because of these conflicting results, ob/gyn associations have been hesitant to recommend the prophylactic use of antibiotics to prevent preterm birth.

There have been a lot of conflicting results about the role of antibiotics in preventing preterm birth," said Dr. Bujold. "These findings will go a long way towards dispelling some of the confusion around the use of antibiotics during pregnancy, and help open up new thinking about how certain antibiotics can be used to help prevent preterm birth."

The study also provides illumination into the causes of preterm labour, adding further weight to the belief that it can be caused by a long-term infectious process.

## **About Preterm Birth**

Normally, delivery occurs between the 37th and 41st week of pregnancy. Preterm birth occurs when a baby is born before the 37th week of pregnancy. It occurs in 7-11% of all pregnancies, and is the leading cause of perinatal death and morbidity. The perinatal period is the period surrounding childbirth, extending from five months prior to birth and one month following birth.

Often, premature baby's organs are not fully developed and unable to function by themselves. In some cases, babies born prematurely will experience negative health effects that persist throughout their lives. Typically, babies born before the 25th week do not survive without problems.

There are many risk factors that put a woman at higher risk for preterm labour, such as smoking, strenuous work or high stress levels, an underweight mother, or if the mother has delivered preterm before.

There are also many ways that women can help prevent preterm labour. These include quitting smoking, getting proper diet and rest, reduce stress and strenuous work levels, and learning to recognize the signs of preterm labour.

## **About the JOGC**

Administered by the Society of Obstetricians and Gynaecologists of Canada (SOGC), the Journal of Obstetrics and Gynaecology Canada (JOGC) is Canada's peer-reviewed journal of obstetrics, gynaecology, and women's health. Each monthly issue contains original research articles, reviews, case reports, commentaries, and editorials on all aspects of reproductive health. JOGC is the original publication source of evidence-based clinical guidelines, committee opinions, and policy statements that derive from standing or ad hoc committees of the Society of Obstetricians and Gynaecologists of Canada. JOGC is included in the National Library of Medicine's MEDLINE database, and abstracts from JOGC are accessible on PubMed.

## **About Dr. Emmanuel Bujold**

Dr. Emmanuel Bujold is an assistant professor in the Department of Obstetrics & Gynaecology of Laval University's School of Medicine, as well as a research scientist at the Centre de recherche du CHUL (CHUQ), where he holds the Jeanne et Jean-Louis Lévesque Chair in Perinatology.

Born in Gaspésie, Dr. Bujold completed his medical studies and his residency in obstetrics/gynaecology at the University of Montreal. Between 2001 and 2004, he completed a fellowship in maternal fetal medicine at Wayne State University, Detroit, USA. His research interests center on vaginal birth after caesarian section, external cephalic version, preterm labor and delivery, as well as preterm prelabor rupture of membranes. In 2005-2006, he received a clinical research award from the Canadian Institutes of Health Research, as well as a grant from the Canada Foundation for Innovation for the development of a laboratory relying on proteomics to study the physiopathology of prematurity.

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**Resources:**

**The Society of Obstetricians and Gynaecologists of Canada - Preterm Birth –**  
[http://www.sogc.org/health/pregnancy-preterm\\_e.asp](http://www.sogc.org/health/pregnancy-preterm_e.asp)

**Best Start Program - Preterm Birth: Making a Difference**  
[http://www.beststart.org/resources/rep\\_health/pdf/Preterm\\_mstr.pdf](http://www.beststart.org/resources/rep_health/pdf/Preterm_mstr.pdf)