

### Summary

- Nausea and vomiting of pregnancy affects the vast majority of pregnancies and antiemetics such as metoclopramide and ondansetron may be prescribed for the management of these symptoms.
- A recent multinational study showed that Canada had the highest prevalence (42%) of antiemetic use during pregnancy, yet the potential for increased risk of fetal abnormalities remains unknown.
- The goal of the study is to quantify the risk of fetal abnormalities (overall and organ specific) associated with ondansetron use during pregnancy.
- We found no statistically significant association between ondansetron exposure and risk of overall major congenital malformation, but caution is warranted due to small numbers of ondansetron exposure in the cohort.

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### What is the current situation?

Nausea and vomiting of pregnancy affect up to 80% of pregnancies and typically occurs during the first trimester, the most sensitive time for environmental exposures. Antiemetics such as metoclopramide and ondansetron may be prescribed for severe NVP. The number of ondansetron-exposed pregnancies markedly increased between 2006 and 2014. A recent multinational study showed that Canada had the highest prevalence (42%) of antiemetic use for the treatment of nausea and vomiting in pregnancy, yet evidence regarding risk of fetal abnormalities related to ondansetron remains inconsistent and inconclusive.

### What was the aim of the study?

- We aimed to quantify the risk of fetal abnormalities (overall and organ specific) associated with ondansetron use during pregnancy.
- Given that organogenesis occurs in the first trimester, the first trimester will be the preferred exposure time-window (primary analysis) but the risk associated with second and third trimester exposures will also be studied (secondary analysis).

### How was the study conducted?

We used the Quebec Pregnancy Cohort, an ongoing population-based cohort with prospective data collection on all pregnancies that occurred between January 1998 and December 2015 in the province of Quebec, including the RAMQ medical service database, the Quebec Public Prescription Drug Insurance database, the MedEcho hospitalization database, and the Quebec Statistics database. Exposure to ondansetron was defined based on prescriptions filled, and major congenital malformations in the RAMQ and MedEcho databases were defined according to ICD-9 and ICD-10 diagnostic codes. Generalized estimating equations models were used, with pregnancy as unit of analysis.

### What did the study find?

- Among the 31 pregnancies exposed to ondansetron, two resulted in a major congenital malformation (congenital hydronephrosis, anomaly of the tongue).
- No statistically significant association was found between ondansetron exposure and the risk of overall major congenital malformations.
- Caution is warranted, given the relatively low number of exposed pregnancies.

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