Twenty-five years of counseling family physicians

What have we learned?

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ABSTRACT

QUESTION In 1985, for the first time I asked Motherisk for advice regarding a pregnant patient who, unaware of her pregnancy, had taken tetracycline. I was very concerned, as was my patient, who was ready to terminate a wanted pregnancy for fear that she had harmed her baby. As a direct result of your advice, this "fetus" is now a happy 25-year-old mother of a healthy son. Your answer to me was as follows: This woman was exposed to tetracycline long before the teeth buds were formed; therefore, there was no apparent fetal risk. What do you think is some of the most important information you have given to practising family physicians over the past 25 years?

ANSWER Unfortunately, too many decisions regarding management of pregnant women are based on misinformation or misconceptions of teratogenic risk. It is critical to base therapeutic decisions regarding exposures during pregnancy on balancing risks of untreated maternal disease with the existing evidence-based information on fetal safety.

RÉSUMÉ

QUESTION En 1985, je vous ai demandé conseil pour la première fois à propos d'une de mes patientes qui, ne sachant pas qu'elle était enceinte, avait pris de la tétracycline. J'étais très préoccupé, tout comme ma patiente, qui était prête à mettre un terme à sa grossesse par crainte d'avoir causé des problèmes à son bébé. Directement grâce à vos conseils, le « fœtus » est maintenant l'heureuse mère de 25 ans d'un fils en bonne santé. Votre réponse à ma question se lisait comme suit : Cette femme a été exposée à la tétracycline bien avant la formation des bourgeons dentaires; par conséquent, il n'y a pas de risque fœtal apparent. Selon vous, quels sont certains des plus importants renseignements que vous avez fournis aux médecins de famille en pratique active au cours des 25 dernières années?

RÉPONSE Malheureusement, trop de décisions dans la prise en charge des femmes enceintes se fondent sur de l'information erronée ou une mauvaise compréhension des risques tératogènes. Il est essentiel de prendre les décisions thérapeutiques concernant les expositions durant la grossesse en faisant un juste équilibre entre les risques de ne pas traiter la maladie maternelle et les renseignements fondés sur les données probantes existants sur la sécurité fœtale.

When Motherisk began counseling women and health care professionals regarding drug use and other exposures during pregnancy on September 20, 1985, we believed that our main challenge was to prevent fetal malformations. However, it soon became apparent that one of our biggest challenges was to prevent unnecessary terminations of otherwise-wanted pregnancies, based on misinformation or misconceptions. Early on we documented that women exposed to nonteratogenic drugs believed they had, on average, a 25% risk of major malformations, although in reality their risk ranged from 1% to 3%. Educating and counseling women already booked for pregnancy termination owing to misconceptions of risk can lead to the reversal of this very unfortunate chain of events.[1]

In the intervening years, after counseling more than 500 000 callers over the telephone and seeing approximately 6000 women in our clinic—all of whom were advised of the expected 1% to 3% risk of major malformations in the population, regardless of exposure—this perception of risk has decreased considerably. However, there continue to be some women who still believe their risk is far higher than it actually is.[2]

Important considerations

We have learned that physicians caring for pregnant women sometimes hesitate to initiate or continue drug therapy because of medicolegal fears. An unfortunate example of this trend is the unwillingness to treat even moderate to severe depression, owing to mixed messages regarding the safety of antidepressants. We have counseled severely depressed women in crisis whose physicians refused to prescribe selective serotonin reuptake inhibitors, despite compelling evidence that the

risks of untreated depression might be far more serious than the, thus far, unproven risks of the medications to fetuses.[3]

Another important area to be considered by family physicians is the use of folic acid for the prevention of neural tube defects. Despite folate fortification of flour products in Canada, 40% of Canadian women do not achieve protective systemic levels of folate to prevent neural tube defects.[4] This led Motherisk, in collaboration with the Society of Obstetricians and Gynaecologists of Canada, to suggest 5 mg of folate daily to a larger group of women who might be at risk (**Box 1**).[5]

Box 1. High-risk groups necessitating a 5-mg daily intake of folate

Patients with ...
- specific genotypes associated with higher risks for NTDs
- previous NTDs or family history of NTDs
- malabsorption disorders (eg, IBD)
- obesity with BMI > 35 kg/m^2
- diabetes
- compliance and lifestyle issues

Patients who ...
- use antiepileptic drugs
- use folate antagonists (eg, MTX, sulfa drugs)
- smoke
- belong to a high-risk ethnic group (eg, Sikh, Celtic, Northern Chinese)

BMI—body mass index, IBD—inflammatory bowel disease, MTX—methotrexate, NTD—neural tube defect.
Data from Wilson et al.[5]

Nausea and vomiting of pregnancy is another condition for which we have spent much time conducting research and counseling women. Through our nausea and vomiting of pregnancy help line, we hope to make women's day-to-day lives easier when coping with this sometimes debilitating condition of pregnancy, which is often ignored by caregivers in the medical community.[6]

Lastly, the most serious but preventable adverse teratogenic effect in pregnancy is the fetal alcohol spectrum disorder, affecting an estimated 1% of all Canadian children. Eradicating this avoidable tragedy must start with early identification of the problematic drinking mother and early screening to identify children at risk. Two initiatives by the Public Health Agency of Canada (in collaboration with Motherisk) to identify maternal drinking and screen children for fetal alcohol spectrum disorder have yielded new guidelines and tool kits, which will soon be distributed to all clinicians from coast to coast.

Conclusion

We thank the many family physicians across the country for their support and collaboration and for asking the right questions (approximately 4500 faxes with 15000 questions), hundreds of which have been answered in Motherisk Update articles in *Canadian Family Physician* since 1995. The answers have and will continue to empower Canadian women and their physicians in making evidence-based decisions regarding the use of drugs and other exposures during pregnancy.

Keep the questions coming and we will continue to answer them ....

Competing interests
None declared

References

1. Koren G, Pastuszak A. Prevention of unnecessary pregnancy terminations by counselling women on drug, chemical, and radiation exposure during the first trimester. *Teratology* 1990;41(6):657-61.
2. Bonari L, Koren G, Einarson TR, Jasper JD, Taddio A, Einarson A. Use of antidepressants by pregnant women: evaluation of perception of risk, efficacy of evidence based counseling and determinants of decision making. *Arch Womens Ment Health* 2005;8(4):214-20. Epub 2005 Jun 17.
3. Einarson A, Selby P, Koren G. Abrupt discontinuation of psychotropic drugs during pregnancy: fear of teratogenic risk and impact of counselling. *J Psychiatry Neurosci* 2001;26(1):44-8.
4. Bar-Oz B, Koren G, Nguyen P, Kapur BM. Folate fortification and supplementation—are we there yet? *Reprod Toxicol* 2008;25(4):408-12. Epub 2008 May 3.
5. Wilson RD, Johnson JA, Wyatt P, Allen V, Gagnon A, Langlois S, et al. Pre-conceptional vitamin/folic acid supplementation 2007: the use of folic acid in combination with a multivitamin supplement for the prevention of neural tube defects and other congenital anomalies. *J Obstet Gynaecol Can* 2007;29(12):1003-26. Erratum in: *J Obstet Gynaecol Can* 2008;30(3):193. Available from: **www.sogc.org/guidelines/documents/guiJOGC201JCPG0712.pdf**. Accessed 2010 May 17.
6. Einarson A, Maltepe C, Boskovic R, Koren G. Treatment of nausea and vomiting in pregnancy. An updated algorithm. *Can Fam Physician* 2007;53:2109-11. Available from: **www.cfp.ca/cgi/reprint/53/12/2109**. Accessed 2010 May 17.

MOTHERISK

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Do you have questions about the effects of drugs, chemicals, radiation, or infections in women who are pregnant or breastfeeding? We invite you to submit them to the Motherisk Program by fax at 416 813-7562; they will be addressed in future **Motherisk Updates**.

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