"Patient Perception of Teratogenic Risk"

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Ever since the thalidomide disaster almost 50 years ago, people have been concerned about the possible teratogenic effects of medications, and many pregnant women believe almost any drug is teratogenic. The way in which they and their families perceive the teratogenic risks of medications—even in medications with no such known risks—can result in unnecessary anxiety and sometimes even the unnecessary termination of a pregnancy. But when women are provided with the available evidence and accurate information, those concerns can be put into the proper perspective, particularly these days, when more information about the reproductive safety of drugs is becoming available.

A striking example of the effects of an exaggerated perception of risk is provided by a 1987 report from Greece that estimated that in May 1986, the month after the Chernobyl nuclear accident in Ukraine, 23% of early pregnancies in Athens were terminated because of concerns about the radiation risk from the fallout of the accident (Br. Med. J. Clin. Res. Ed. 1987;295:1100). When the Motherisk program, a teratogen information service, was started in 1985, the primary focus for me and my colleagues was to prevent malformations in cases in which women were exposed to genuine teratogens. But it soon became apparent to us that our work would also include preventing unnecessary terminations of pregnancies.

We received many calls from pregnant women who had been exposed to non-teratogenic drugs in early pregnancy and who were concerned nevertheless that there was a risk of having a baby with a malformation. They were considering terminating their pregnancies. Today, we continue to receive such calls, including some from women whose physicians have advised them to terminate pregnancy because of such an exposure.

Because of this experience, we have conducted studies for more than 20 years on how women perceive the teratogenic risk of medications and other exposures, such as dental x-rays, and we have shown how providing them with the available, accurate information has a significant impact on their misperceptions, swaying them away from choosing to terminate the pregnancy. In our first study of 80 women who consulted Motherisk about drugs, chemical, and radiation exposures, we used a visual analog scale measuring a woman’s perception of risk during pregnancy, with a range of 0 to 100.

We were surprised to find that women exposed to non-teratogenic drugs such as acetaminophen, or to dental x-rays, which have no known fetal risk, considered themselves to be at about a 24% risk of having a major malformation, similar to the magnitude of risk associated with thalidomide. But after the women were provided with relevant information, this percentage dropped to about 14.5%, and there was a significant reduction in the tendency toward choosing to terminate the pregnancy (Am. J. Obstet. Gynecol. 1994;171:1140-4).

Since that time, we have conducted similar studies on the perceptions of risk associated with other exposures, including mild maternal drinking, recreational cocaine use, and treatments for nausea and vomiting, with similar results. In a 1999 study, we found that evidence-based counseling of women with unfounded fears of the teratogenic risks of treatment for nausea and vomiting reduced the proportion of women in the study who mistakenly believed that antiemetic drug therapy increased the risk of major malformations (Reprod. Toxicol. 1999;13:313-9).

Radiation exposure elicits huge anxieties, as does mild alcohol consumption and use of drugs that are non-teratogenic at high doses in animals, but have not been shown to be teratogenic in humans. Because of the fear of fetal-alcohol syndrome, some women consider terminating their pregnancy because of a few drinks they had before they knew they were pregnant—yet another example where misinformation and misperception unnecessarily lead to terminations of otherwise wanted pregnancies.

The lack of information in the product labeling of drugs contributes dramatically to these misperceptions of risk. The current pregnancy category letter labeling system in the United States remains unchanged, despite plans to revise the system. Although more information about safety during pregnancy has been added to some drug labels, in most cases, labels suggest there are not enough data—even if relevant data exist. A physician who reads the fluoxetine label, for example, may not find adequate information to counsel a patient, despite evidence in the literature that the drug is safe in terms of morphology, as well as IQ and learning.

By providing evidence-based counseling, clinicians can address a patient’s unrealistic high perception of risk and make a difference. Providing more information about the reproductive risks of drugs from the Organization of Teratology Information Specialists (866-626-6847 or www.otispregnancy.org). Other resources include Motherisk (www.motherisk.org), and the MCH Center for Women’s Mental Health (www.womensmentalhealth.org). There is also my book, “Medication Safety in Pregnancy and Breastfeeding,” (McGraw-Hill, 2007), which summarizes information from the Motherisk database.