Drugs, Pregnancy, and Lactation

The Pregnancy Registries

BY GERALD G. BRIGGS, B. PHARM., FCCP

Pregnancy registries are valuable sources of information, and for many drugs and vaccines they are the primary source of human pregnancy experience. The strengths of these registries are their prospective nature—women are enrolled before the outcome is known—and enrollment is over a wide geographical area. Typically, two types of pregnancy outcomes are obtained: outcomes with birth defects and outcomes without known birth defects. The latter comprises live births, fetal deaths, and spontaneous abortions.

Registries can identify early signals of teratogenicity, but they have several limitations. They depend on voluntary reporting, which results in selection bias, and they are not representative of target populations. Pregnancies that are lost to follow-up may have had different outcomes than those with documented outcomes. Furthermore, registries lack details on elective terminations and fetal deaths without birth defects, and all spontaneous abortions. Finally, with some exceptions, they usually lack control groups.

Because the total number of exposed pregnancies is unknown, data from a registry cannot be used to calculate prevalence of an outcome, but the data can be used to estimate the proportion of birth defects.

Some registries also collect data on retrospective reports, which are less representative of the target population because they can be biased toward the reporting of more unusual and severe outcomes. However, they may be helpful in detecting unusual patterns of birth defects.

In the chart below are the pregnancy registries listed on the Food and Drug Administration Web site, which provides additional details on the registries, such as fax numbers, links to other Web sites, and mailing addresses (www.fda.gov/womens/registries).

Because the strength of a registry is based on numbers, I encourage health care professionals to enroll appropriate patients in these registries whenever possible. ■

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Registries/Studies

Organization of Teratology Information Specialists (OTIS)* Autoimmune Diseases Study
(877-311-8972)
Rheumatoid arthritis, psoriasis, psoriatic arthritis, ankylosing spondylitis
Leflunomide (Arava), etanercept (Enbrel), adalimumab (Humira), abatacept (Orencia)

OTIS Vaccinations in Pregnancy Study (877-311-8972)
Tetanus, diphtheria and pertussis, influenza, and/or meningococcal vaccines
*includes control groups and dysmorphology examinations of exposed infants

Motherisk Program* (800-670-6126)

Vaccines	Hepatitis B vaccine (includes Twinrix)
Toe and nail fungal infections	Lamisil
Weight loss	Meridia (sibutramine)
Asthma	Singulair (montelukast)

*includes control groups

Kendle International Pregnancy Registries

HIV/AIDS (800-258-4263)	Antiretroviral agents
Migraine headaches (800-336-2176)	Imitrex (sumatriptan) and Amerge (naratriptan)
Multiple sclerosis (800-478-7049)	Betaseron (interferon beta-1b)
Partial onset seizures (888-537-7734)	Keppra (levetiracetam)
Partial seizures (800-336-2176)	Lamictal (lamotrigine)
Hepatitis C (800-593-2214)	Copegus (ribavirin)
Depression (800-336-2176)	Wellbutrin and Zyban (bupropion)

Amevive Pregnancy Registry (866-834-7223)
Chronic plaque psoriasis — Amevive (alefacept)

Avonex Pregnancy Registry (800-811-0104)
Relapsing forms of multiple sclerosis — Avonex (interferon beta-1a)

Cooper Health Cancer and Childbirth Registry
Cancer medicines (856-757-7876)

Fabry Registry (800-745-4447, ext. 15500)

Fabry disease	Fabrazyme (agalsidase beta)
Hurler-Scheie Syndrome/Mucopolysaccharidosis I	Aldurazyme (laronidase)

Massachusetts General Hospital* AED Pregnancy Registry (888-233-2334)
Antiepileptic drugs
*includes comparison group

Merck Pregnancy Registry Program (800-986-8999)

Chickenpox	Varivax vaccine
MMR and chickenpox	ProQuad vaccine
Herpes Zoster	Zostavax vaccine
Human papilloma virus (HPV)	HPV vaccine (Gardasil)
Type 2 diabetes	Janumet (sitagliptin/metformin)
Type 2 diabetes	Januvia (sitagliptin)
Migraine headaches	Maxalt (rizatriptan)
Asthma	Singulair (montelukast)

MPS VI Clinical Surveillance Program
Maroteaux-Lamy syndrome (polydystrophic dwarfism or mucopolysaccharidosis VI [MPS VI])
Galsulfase (naglazyme)
clinicaltrials.gov/ct/show/NCT00214773?order=2

National Transplantation Pregnancy Registry
Antirejection drugs
(877-955-6877)

Raptiva Pregnancy Registry
Chronic plaque psoriasis (877-727-8482) — Efalizumab (Raptiva)

Rebif Pregnancy Registry
Multiple sclerosis (877-447-3243) — Interferon beta-1a (Rebif)

Tysabri Pregnancy Registry
Multiple sclerosis (866-831-2358) — Natalizumab (Tysabri)

Neoral Pregnancy Registry
Psoriasis and rheumatoid arthritis (888-522-5581) — Cyclosporine (Neoral)

Twinrix Pregnancy Registry
Hepatitis A & B Prevention (888-522-5581) — Hepatitis A/hepatitis B vaccine (Twinrix)

Xolair Pregnancy Registry
Asthma (866-496-5247) — Omalizumab (Xolair)

Maternal HCV Infection Tied to Adverse Neonatal Outcomes

BY DOUG BRUNK
San Diego Bureau

San Diego — In pregnancy, maternal hepatitis C virus infection may have a negative impact on both maternal and neonatal health, results from a population-based study in Washington State demonstrated.

"Further prospective studies are needed, but I think this brings up the question of whether screening needs to be reevaluated in pregnant women," Dr. Steven Pergam said at the annual meeting of the Infectious Diseases Society of America.

"Current recommendations by the American College of Obstetricians and Gynecologists and the Centers for Disease Control and Prevention have recommended screening high-risk patients. This is based mainly on the risk of perinatal transmission. Universal screening has been modeled in a number of studies and it has not been felt to be cost effective," Dr. Pergam added.

He and his colleagues used Washington State singleton birth records and Comprehensive Hospital Abstract Reporting System data from 2003-2005 to identify hepatitis C virus (HCV) infection in mothers. "HCV information was added to the Washington State birth database in 2003, providing us a great opportunity to look at some of these outcomes," said Dr. Pergam, a fellow in infectious diseases at the University of Washington, Seattle.

The researchers matched HCV-positive mothers in a ratio of 1:4 with HCV-negative mothers who were randomly selected from the same data set and evaluated maternal and neonatal outcomes associated with HCV.

Of the 240,131 singleton births studied, 506 were born to HCV-positive mothers with a mean age of 30 years and were matched with 2,022 born to HCV-negative mothers with a mean age of 28 years.

HCV-positive mothers who had excess weight gain during pregnancy, according to Institute of Medicine Guidelines, were 2.5 times more likely than their HCV-negative counterparts to develop gestational diabetes.

'I think this brings up the question of whether screening needs to be reevaluated in pregnant women.'

DR. PERGAM

Compared with infants born to HCV-negative mothers, infants born to HCV-positive mothers were 2.2 times more likely to have low birth weight, 1.5 times more likely to be small for gestational age, 2.8 times more likely to require neonatal intensive care unit admission, and 2.4 times more likely to require assisted ventilation.

A subanalysis of infants born to 124 drug-using HCV-positive mothers revealed that the adverse outcomes of low birth weight, and being small for gestational age fall out as associated adverse outcomes. "It's not surprising that drug use would be a driving factor in these issues," he said. ■