Biomedicine

Prozac and pregnancy

Prozac can be a lifeline for a depressed woman, but this depression-fighting drug is generally banned during pregnancy. Now, a study offers women more information on the question of whether they can safely use Prozac when pregnant.

Prozac (fluoxetine) is the most commonly prescribed antidepressant in the United States. Yet not much is known about the drug's impact on a developing embryo or fetus. Kenneth Lyons Jones of the University of California, San Diego and his colleagues studied 228 pregnant women who called the California Teratogen Information Service (CTIS) from 1989 through 1995 because they were taking fluoxetine. The team compared those women to 254 pregnant women who called during the same period but were not taking the drug.

The researchers report in the Oct. 3 NEW ENGLAND JOURNAL OF MEDICINE that the women taking fluoxetine had no greater risk of miscarriage than the control group. The study also revealed no heightened risk of major birth defects, such as cleft palate, among their babies.

So far, so good.

The study did uncover some potential dangers, however. When taken during the first trimester of pregnancy, fluoxetine seemed to increase the chance that a baby would be born with three or more minor malformations, such as fused toes. Women who continued to take the drug in the third trimester of pregnancy ran a greater risk of premature delivery and of delivering small babies suffering from a variety of health problems.

Pregnant women taking fluoxetine should talk to their obstetrician about the new findings, advises Jones. Those who can stop taking the drug safely during pregnancy should do so, he says. However, "there clearly are a number of women who, by virtue of their depression, need to continue that drug."

Cow's milk: New link to diabetes?

The debate over whether an infant's ingestion of cow's milk spurs the emergence of diabetes later on seems to seesaw between yes and no, depending on the results of the latest research. As recently as August, doctors at the University of Colorado School of Medicine in Denver downplayed the likelihood of any such link after analyzing a nutritional survey and blood tests of 253 diabetes-prone children (SN: 9/7/96, p. 151).

Now, the balance may tip once more, with a new report showing that some people with insulin-dependent diabetes mount an immune response to the protein beta casein, which makes up 35 percent of the total protein in cow's milk. (All four forms of casein together account for less than one-fourth of the protein in human milk.)

Maria Gisella Cavallo and her coworkers at the University of Rome found that 24 of 47 people with diabetes had a flood of white blood cells, or T cells, primed to attack casein. In contrast, just 1 of 36 healthy volunteers and none of 10 people with thyroid disease mounted an immunological assault on that milk protein.

The results, which mirror those of an earlier trial in Finland, "reinforce the concept" that beta casein might trigger diabetes, Cavallo and her colleagues contend in the Oct. 5 LANCET.

Although the mechanism remains unclear, researchers postulate that the T cells are diverted from their offensive against beta casein and redirected toward insulin-producing beta cells in the pancreas.

Drawing on the Finnish study and others, a working group of the American Academy of Pediatrics recommended in 1994 that parents avoid feeding cow's milk to their babies. But an editorial in the Aug. 28 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION argued that the risks of malnutrition "in growing numbers of children" vastly outweigh the diabetes-preventive benefits of a diet free of cow's milk.

Contraceptive concerns about HIV

A study showing that the hormone progesterone thins the vaginal wall of monkeys has raised concerns that the use of certain contraceptives may increase a woman's risk of infection by HIV, the AIDS virus.

The worrisome data result from experiments in which researchers implanted progesterone-secreting devices under the skin of macaque monkeys. The implants simulate popular contraceptive implants such as Depo-Provera and Norplant, which release progestin, a synthetic version of progesterone, into a woman's bloodstream. In the United States alone, several million women depend on such devices.

Scientists squirted SIV, the monkey version of HIV, into the vaginas of 18 monkeys that had progesterone implants. Of that group, 14 became infected, report Preston A. Marx of the Aaron Diamond AIDS Research Center at Rockefeller University in New York and his colleagues in the October NATURE MEDICINE. In contrast, only 1 of 10 monkeys not receiving progesterone became infected when inoculated that way.

To explain the difference, Marx's group examined another group of monkeys given progesterone implants. In those monkeys, the layer of cells forming the vaginal wall was much thinner than in normal animals. "There appears to be a thinner barrier and therefore less protection [from SIV infection]," says Marx.

Marx and other researchers caution that these results are difficult to interpret in terms of humans. Because the synthetic hormone may generate different effects than progesterone does, Marx intends to repeat his simian studies with progestin.

In June, the National Institutes of Health in Bethesda, Md., convened a workshop to consider the then-unpublished data from Marx's group. Past epidemiological studies offered conflicting results about whether Depo-Provera, Norplant, and similar devices change a woman's risk of getting infected with HIV. Investigators agree that, since the previous work is not convincing one way or the other, new studies must be conducted, says Marx. Several research groups also intend to study the thickness of the vaginal wall in women using progestin-based contraceptives.

Despite Marx's data, scientists say there is not enough information to warrant a warning about such devices. "The scientists at the meeting concluded that there should be no change in prescribing practices for contraceptives. At the same time, there are questions still open and several lines of inquiry being pursued," says Robert Spirtas, chief of the contraceptive and reproductive evaluation branch at NIH's National Institute of Child Health and Human Development.

Alzheimer's mouse, part III

First came genetically engineered mice that developed plaques, or thick deposits of a protein called beta-amyloid, in the brain but showed no obvious memory problems (SN: 2/11/95, p. 84). Then researchers created mice whose memory skills deteriorated with age but whose brains had few amyloid plaques (SN: 6/10/95, p. 358).

Now, a group of investigators from the United Kingdom and the United States has finally produced mice suffering from both of these cardinal features of Alzheimer's disease. They added to the mice a gene for the protein precursor of beta-amyloid, having first given the gene a mutation identical to one found in a family plagued by early-onset Alzheimer's.

The mice began suffering memory problems 9 to 10 months after birth, had significantly more beta-amyloid in their brains than normal mice, and developed numerous plaques, Karen Hsiao of the University of Minnesota in Minneapolis and her colleagues report in the Oct. 4 SCIENCE. The researchers intend to study how well other aspects of the animals model the human disease and to use them to test potential new drugs for Alzheimer's.

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