Screening Tool Predicted Pain After C-Section

BY MIRIAM E. TUCKER

FROM THE ANNUAL MEETING OF THE SOCIETY FOR OBSTETRIC ANESTHESIA AND PERINATOLOGY

SAN ANTONIO — A 1-minute, three-question screening tool accurately predicted post–cesarean section pain in a study of 192 women who underwent elective cesarean sections with spinal morphine.

VITALS

Major Finding: A 1-minute, 3-question screening tool predicted individuals in the top 20th percentile of pain scores, with a sensitivity of 67% and a specificity of 72%.

Data Source: Study of 192 women who underwent elective C-sections with spinal morphine.

Disclosures: None was reported.

The quick, simple screen was nearly as sensitive and specific in predicting pain after delivery as was a 120-minute battery of tests used in a previous study (Anesthesiology 2006;104:417-25).

"We were looking for a simple, clinically useful way to identify patients at high risk for severe acute pain and subsequent complications who might benefit from earlier intervention," said Dr. Ashley M. Tonidandel of Wake Forest University, Winston-Salem, N.C.

The three screening questions that were used in the investigation addressed the three strongest independent predictors of postcesarean pain and narcotic usage identified in the study published in Anesthesiology and in another study (Clin. J. Pain 2009;25:455-60).

Those predictors were anticipated pain level following surgery (on a scale of 0-100), anxiety regarding the upcoming surgery (1-100), and estimated pain medication usage (much less to much more than average).

The study participants had a mean age of 30 years and a mean body mass index of 34 kg/m^2. Nearly three-fourths were white. The majority (88%) were undergoing repeat cesareans.

At 24 hours following surgery, the mean evoked pain score was 44 (out of 100). The patients used an average of 19 morphine equivalents over 24 hours. More than half of the participants (54%) received a total of 200 mcg of spinal morphine, according to Dr. Tonidandel.

Anxiety, anticipated pain, and expected medication usage were all significantly related to evoked pain and 24-hour morphine equivalents, with high scores on any two of the three items significantly predicting high pain scores.

Overall, the model accounted for 22% of the variance in predicted pain scores, which is "pretty good considering the 22%-28% of variance from the 120-minute battery of questions," Dr. Tonidandel commented at the meeting.

Using a regression equation, the screening tool predicted individuals in the top 20th percentile of pain scores with a sensitivity of 67% and a specificity of 72%. With the 120-minute screen, those values were 70% and 76%, respectively, she said.

Identifying women at high risk for severe postpartum pain is especially important because previous studies have shown that women who have it are in turn at greater risk for the development of chronic pain (Pain 2008; 140:87-94).

In the future, adding genetic information to the model might further increase its accuracy, although "our aim was to simplify," she said. ■

DRUGS, PREGNANCY, AND LACTATION

New Data on Valproic Acid

BY LEE COHEN, M.D.

Concerns regarding fetal exposure to valproic acid have been longstanding. Many teratovigilance programs around the world have identified an increased risk for congenital malformations associated with first-trimester exposure to valproic acid, particularly neural tube defects. Data from the North American Antiepileptic Drug Pregnancy Registry indicate that the risk of neural tube defects after monotherapy with valproic acid during the first trimester is about 10%. Until recently, fewer data have been available on other malformations associated with fetal exposure to this antiepileptic medication.

A large study published in June attempted to further delineate the risks of major malformations associated with first-trimester exposure to valproic acid monotherapy, using a two-step novel approach. First, investigators identified a teratogenic signal, that is, a spectrum of malformations that were more common than expected in offspring exposed to valproic acid during the first trimester based on a series of cohort studies. Then they sought to confirm the signal for a subset of those malformations by conducting a population-based, case-control study using a very large population-based database of congenital anomalies by determining the frequency of valproic acid exposure associated with those malformations (N. Engl. J. Med. 2010;362:2185-93).

In the eight cohort studies, there were 118 major congenital malformations in 1,565 pregnancies during which women took valproic acid (a rate of 7.5%). Of those, 14 malformations were found more commonly in valproic acid–exposed offspring: The case-control study used the antiepileptic study database established by European Surveillance of Congenital Anomalies (EUROCAT) of over 3 million live births and about 98,000 major congenital malformations in 14 European countries from 1995 through 2005. Comparing 37,154 cases of any of the 14 malformations with 39,472 controls with other types of major malformations and 11,763 controls with malformations associated with chromosomal abnormalities, first-trimester exposure to valproic acid was associated with an increased risk of 6 of the 14 malformations, compared with the two control groups: spina bifida (adjusted odds ratio 12.7), atrial septal defect (2.5), cleft palate (5.2), hypospadias (4.8), polydactyly (2.2), and craniosynostosis (6.8).

Despite the challenges involved when conducting these types of analyses—including inconsistent criteria used to categorize anomalies across studies or registries—the findings reported in this article are highly consistent with findings from previous studies and are, therefore, confirmatory while also refining the risk estimates for major malformations associated with valproic acid other than neural tube defects.

The authors of the EUROCAT Antiepileptic Study Working Group concluded that their results provided further support for the American Academy of Neurology's recommendation to avoid treatment with valproic acid during pregnancy. Neurologists have certainly been aware of the reproductive risks of valproic acid for many years, and typically choose alternative anticonvulsants with comparable efficacy for women of reproductive age.

The situation is somewhat different in psychiatry, however, because valproic acid is a mainstay of therapy for the treatment of bipolar disorder. In previous columns, I have discussed the use of valproic acid, as well as lithium, lamotrigine, and atypical antipsychotics for women of reproductive age with bipolar disorder.

These include a review of the evidence associating in utero exposure throughout pregnancy to valproic acid with neurobehavioral sequelae in children (Ob.Gyn. News, Dec. 15, 2004). I also reviewed the reproductive safety of first-trimester exposure to lithium, which is associated with a 0.05% risk (1 in 2,000) of the cardiac malformation Ebstein's anomaly; and the still sparse reproductive safety data for the newer atypical antipsychotics, such as olanzapine, quetiapine, and risperidone (Ob.Gyn. News, April 15, 2008). First-trimester exposure to lamotrigine, another treatment option for bipolar illness, may be associated with a 0.9% risk of oral clefts based on at least one registry, but has not been associated with overall increase risk of major congenital malformations. However, lamotrigine monotherapy does not seem to be as effective for the full spectrum of patients clinicians see with bipolar disorder, particularly those with predominantly manic-like symptoms.

In our program, we counsel hundreds of women of reproductive age each year who have bipolar disorder about the reproductive safety of medication options. Given its teratogenicity and behavioral teratogenicity, valproic acid should be considered contraindicated during pregnancy for the treatment of bipolar disorder with only the most rare exceptions, if any.

One option to consider with respect to treatment of bipolar disorder during pregnancy is lithium, where the teratogenic risk is established but is quantified and small (0.05%).

Another option might even include a class of medications where the reproductive safety is not yet clearly defined. Although this goes against the maxim "a known is better than an unknown," medicines such as atypical antipsychotics, which do not seem to be associated with teratogenic risks based on limited experience, may be a better choice than a medicine—namely, valproic acid—where the quantified risk for a variety of malformations is consistently very, very great based on systematically conducted studies. As an example, we might use lithium or lamotrigine or even lamotrigine plus an atypical antipsychotic because the alternative—valproic acid—is so teratogenic.

Considering the declining use of lithium to treat bipolar disorder over the past few years and its known teratogenicity, and the very indicting data regarding valproic acid, we have increasing interest in identifying reproductive safety data of other medicines used to treat the illness, such as atypical antipsychotics. Studies are underway to address these issues, including a recently established national pregnancy registry for atypical antipsychotics (see www.womensmentalhealth.org). For now, we treat patients with bipolar disorder who plan to get pregnant on a case-by-case basis, realizing that it might be reasonable to use medicines with quantifiable risks or a treatment that does not have a safety signal, compared with drugs with clearly significant risk for both organ dysgenesis and behavioral teratogenicity.

DR. COHEN *directs the perinatal psychiatry program at Massachusetts General Hospital, Boston, which provides information about pregnancy and mental health at www.womensmentalhealth.org. He said he had no disclosures related to the manufacturers of anticonvulsants.*