Oxytocin use was also associated with substantially lower PPH and severe PPH rates compared with ergometrine. Rates for PPH and mean blood loss were similar in women receiving misoprostol compared with ergometrine, but the women who received misoprostol had much lower rates of severe PPH than those who received ergometrine.

Although oxytocin is superior to misoprostol in the setting of hospital deliveries, in developing countries, where hospital admission is not always the norm for delivery, misoprostol substantially lowers the rates of PPH and severe PPH compared to no uterotonic prophylaxis. Because most PPH deaths occur in rural areas of developing countries, further assessment of oxytocin versus misoprostol use in this setting is recommended.

**Phase 1 Development of an Index to Measure the Quality of Neuraxial Labor Analgesia: Exploring the Perspectives of Childbearing Women**

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Current neuraxial labor analgesia techniques focus on the quality of pain relief, but often do not examine overall maternal satisfaction with the mode of analgesia. Recent advances for labor analgesia include using lower doses of local anesthetic/opioid drug mixtures in epidural analgesia techniques, combined spinal-epidural analgesia, and patient-controlled epidural analgesia, to provide better pain relief, improve maternal mobility, and allow women greater control over their own treatment. Outcome measures in research may not accurately record maternal satisfaction with these newer techniques. The authors of this qualitative, descriptive study theorized that a tool to accurately measure the quality of neuraxial labor analgesia should be based directly on the perspective of women who undergo these procedures.

As an initial step in the development of such a tool, they explored the experiences and perceptions of childbearing women regarding aspects they felt were necessary for "quality" analgesia for labor/delivery. From September 18, 2003, to January 9, 2004, women of mixed parity who had all types of delivery modes were interviewed within 72 hours postpartum in 3 large hospitals in Toronto, Canada. Eligibility for participation in the study included ASA physical status I-II, fluency in English, and use of epidural or combined spinal-epidural analgesia during labor. Women with a history of cognitive impairment or who experienced a neonatal death during the pregnancy were excluded from analysis. Subjects completed a demographic survey and participated in either a focus group discussion or a one-on-one interview.

Fifty-nine women were enrolled—53.6% primiparous and 46.4% multiparous. They had an average gestational age of 39.2 weeks; body mass index of 27.6; an annual income of > $80,000; and most had a university or college education. Epidural analgesia was used in 82.1% of women; mode of delivery was 46.4%, spontaneous vaginal; 14.3%, instrument-assisted vaginal; and 39.3%, cesarean section. Four major themes emerged from the interviews. (1) The enormity of labor pain caused an inability to focus and a struggle to maintain mental and physical control. (2) Fear and anxiety related to epidural use, for example, effects of epidural on labor progress; problems of insertion (back pain, nerve injury, paralysis); lack of access to appropriate anesthesia services; and not being able to freely choose epidurals for relief because of family and/or healthcare provider opposition created anxiety. (3) Women value: restored feelings of internal control; ability to focus, participate, and control breakthrough pain with PCEA; preservation of body sensations to reassure them of progress in labor, mobility, and strength in pushing; and better ability to participate in the overall birth experience when an epidural provided pain relief. (4) Achieving epidural pain relief was more important than avoiding side effects related to its use.

These findings, along with others, support the need for more first-hand information from the woman’s perspective during labor and delivery. This is necessary for researchers to better demonstrate available advances and to guide interpretation of findings in labor analgesia trials and clinical care. The strengths of this study were the accurate descriptions of the experiences of women who just completed delivery, use of multidisciplinary investigators to minimize potential bias, and an effort to promote exacting standards. Limitations were the exclusion of non-English-speaking and less-educated women, who may have different perceptions, and the inclusion of only large urban hospitals, where epidural services are usually readily available. The results provided insights into the perceptions of women who have either made the decision to receive neuraxial labor analgesia prior to labor or who are open to having it if they feel a need for it during labor.

**Preterm Delivery and Risk of Subsequent Cardiovascular Morbidity and Type II Diabetes in the Mother**

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With preterm delivery rising throughout the world, studies have concluded that the “preterm parturition syndrome” involves vascular and metabolic factors that also play a role in preeclampsia and fetal growth restriction. All these pregnancy complications share predisposing factors that are associated with the metabolic syndrome. Studies have already found associations between preeclampsia and fetal growth restriction and increased risks later in life of cardiovascular morbidity and mortality and diabetes mellitus. This national registry-based retrospective cohort study assessed the impact of the severity and recurrence of preterm
delivery on the mother’s risk of cardiovascular events and the metabolic syndrome in the years following pregnancy. The Danish National Patient registry collects information on all deliveries in that country. From this data base, information was obtained on all singleton deliveries from 1978 to 2007 (795,806 deliveries; 965,475 women). Cohort 1 included 782,287 women aged 15 to 50 years with a first delivery, excluding those with a preexisting cardiovascular or diabetes diagnosis. Cohort 2, a subpopulation of cohort 1, included 536,419 women who had a first delivery after the age of 15 years and a second singleton delivery before age 50 years. Patients were stratified into categories based on completed weeks of gestation at delivery (20 to 27 wk, 28 to 31 wk, and 32 to 36 wk); pregnancies ≥37 weeks served as the reference group. Confounding factors were defined as hypertensive disorders of pregnancy, small-for-gestational age and large-for-gestational age infants, placental abruption, and stillbirth after 20 weeks of gestation. The end points evaluated in the study were the first diagnosis of hypertension, ischemic heart disease, thromboembolism, and type 2 diabetes.

The median follow-up periods for cohorts 1 and 2 were 14.6 years and 12.9 years, respectively. Women in cohort 1 who delivered preterm had an increased risk of all cardiovascular events and type 2 diabetes. Patients in cohort 2 who delivered preterm only in the first pregnancy had significantly increased risks of subsequent hypertension and type 2 diabetes. The risks for developing hypertension and diabetes were increased further for women in cohort 2 who had a preterm delivery only in the second pregnancy, and the greatest risks for both diseases among patients in cohort 2 occurred in women who had preterm deliveries in both pregnancies.

These epidemiologic results show that a significant association is present between preterm delivery and subsequent type 2 diabetes and cardiovascular morbidity, especially thromboembolism, in the mother. Recurrence of preterm delivery increased these risks, which were independent of other pregnancy complications.

Method of Delivery and Pregnancy Outcomes in Asia: The WHO Global Survey on Maternal and Perinatal Health 2007-2008

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The rising rate of cesarean deliveries worldwide has become a source of great concern to obstetric providers. This article reports results from the third phase of the World Health Organization (WHO) global survey, designed to estimate the rate of different methods of delivery and to determine the relationship between method of delivery and maternal and perinatal outcomes in selected facilities in Asia in 2007 to 2008.

Cambodia, China, India, Japan, Nepal, Philippines, Sri Lanka, Thailand, and Vietnam participated in the survey. In each country, the capital city and 2 other regions were randomly selected for data collection. Data were obtained on all women admitted for delivery during a 3 months period in facilities with ≥ 6000 expected deliveries per year and during 2 months in those facilities with an anticipated > 6000 deliveries per year. Institutional data collected included characteristics of maternal and perinatal care, anesthesiology resources, services for intrapartum care, delivery, and care of the newborn, and presence or absence of basic emergency medical and obstetric care facilities, intensive care units (ICUs), and human and training resources. Data obtained from individual patients included demographic characteristics, maternal risk, current pregnancy complications, delivery method, and maternal and perinatal outcomes up to the time of hospital discharge. A hospital complexity index that summarized an institution’s ability to provide different levels of care was created and was based on ratings for building infrastructure, general medical care, laboratory quality, anesthesiology services, screening test availability, human resources, basic obstetric services, and continuous medical education. Based on the scoring system developed by the investigators, hospitals were categorized as low complexity (lacked essential services), medium complexity (had all essential services but lacked some optional services), or high complexity (had essential and optional services).

Data were obtained for 109,101 of 112,152 deliveries reported in 122 facilities, of which 107,950 deliveries were analyzed. Many hospitals were secondary or tertiary referral hospitals, but 83 (68%) were rated as low complexity facilities. The overall rate of cesarean section (CS) was 27.3% (n = 29,428), and the rate for operative vaginal delivery was 3.2% (n = 3465). China had the highest overall rate for CS (46.2%) and also the highest rate of CS without indication (11.7%). Overall, the most common indications for CS were previous CS (24.2%), cephalopelvic disproportion (22.6%), fetal distress (20.5%), and breech or other abnormal presentation (12.5%).

The rates of complications during pregnancy were similar regardless of mode of delivery. Operative vaginal delivery had a significantly increased risk of maternal mortality compared with spontaneous vaginal delivery (odds ratio 3.1). Risk of ICU admission was significantly increased for all types of CS and operative vaginal delivery compared with spontaneous vaginal delivery. Operative vaginal delivery, antepartum CS with indications, and intrapartum CS with and without indications also had significantly increased risks for blood transfusion compared with spontaneous vaginal delivery. The need for hysterectomy was increased in patients who underwent operative vaginal delivery and antepartum or intrapartum CS with indications. The maternal mortality and morbidity index was increased for operative vaginal delivery and for all types of CS when compared with spontaneous vaginal delivery. Maternal mortality and morbidity were also increased for intrapartum CS compared to antepartum CS.