

HANDING OVER THE REINS

Researchers are studying how to ease the discomfort of childbirth by tailoring the experience to give women more control over it. They're also working to ensure women have equal access to pain relief services, no matter where they live

Coping with labour pain is something many mothers around the world know all too well.

Although clinicians have used various systemic comfort measures for many years, a limited amount of research has been conducted on developing better therapies for quality pain relief in obstetrics.

Now, scientists in obstetrical anesthesia at Sunnybrook Research Institute (SRI) are gathering evidence on the use of local anesthesia as an effective method for pain management and how it can enhance a woman's experience during childbirth.

Dr. Pamela Angle, director of the obstetrical anesthesia research unit (OARU) at SRI, and Dr. Stephen Halpern, a member of OARU and the head of obstetrical anesthesia in the Women & Babies Program at Sunnybrook Health Sciences Centre, seek to optimize pain relief in labour and postcaesarean care, particularly through epidural analgesia during labour—whereby a local anesthetic is injected into the lumbar area of the spine and freezes the nerves that transmit pain from the uterus.

Andrea Van Wieringen, a mother of two, chose to have a caesarean section and epidural for both of her deliveries because she “couldn't imagine being ‘asleep’ for the birth.”

“I strolled into the operating room where I got my spinal tap and waited for my C-section to begin,” says Van Wieringen, who delivered her second child in September at Sunnybrook's new birthing unit. “It was a great and calming experience to be able to ask my doctor questions while the operation was happening, and to watch everything from the glossy mirror effect on the ceiling in the delivery room.”

By keeping patient safety issues always in mind, especially important for the high-risk patients with whom they work, Angle is developing new health measurement tools for use in obstetric anesthesia to improve the quality of pain relief afforded by epidurals.



DR. PAMELA ANGLE

“Everything we do is driven from a woman's perspective,” says Angle, who is also an associate professor of anesthesia at the University of Toronto. “One challenge is that we measure labour pain by severity, but pain is multidimensional; it affects one's ability to think, along with one's emotional and physical well-being.”

In 2009, Halpern published a review in *Anesthesia and Analgesia* about patient-controlled epidural analgesia, whereby women in labour could adjust how much drug they needed through an electronically controlled infusion pump that delivered a prescribed amount of anesthesia intravenously. The review showed a trend toward improved maternal satisfaction when patients controlled their analgesia.

Clinicians introduced this technique in 1988, and it has been proven to be safe and effective. Two advantages of using patient-controlled epidural pain management are that it allows women to be

awake when they are giving birth, and it reduces the temporary sensation of paralysis in the lower body.

“The idea behind the study is that pain relief itself is not enough, because women want a birthing experience in their own way, which means they want to have more control of their lower body in order to feel what is happening,” says Halpern, who is also a professor of anesthesia, obstetrics and gynecology at U of T. “With patient-controlled epidural analgesia, women can feel less drugged by the anesthetic, and we can provide a more natural environment for them.”

While this type of pain management may increase the satisfaction of women in labour, the researchers say what remains to be seen is how best to deliver patient-controlled analgesia.

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In another study published in the *British Journal of Anaesthesia*, Angle and Halpern studied 501 patients who had epidural labour analgesia and delivered their babies by caesarean section with local anesthesia.

Following guidelines from the Royal College of Anaesthetists in the U.K. on best practices in anesthesia care, the study aimed to determine how successful doctors were in using an epidural already in place for anesthesia for caesarean section. Results showed that clinicians were successful 96% of the time, which was within the guidelines.

“We actually use the epidural as a risk management strategy during labour to help women with diabetes and pre-eclampsia, and to prevent stroke and myocardial infarction,” says Angle about the increased risks caused by an aging population and rise in obesity rates.

In the event of an emergency caesarean delivery, an anesthesiologist can administer surgical anesthesia through the epidural for rapid and effective pain relief.

Research also shows more women are choosing to undergo caesarean section with an epidural or spinal because of the many advantages. Compared with general

anesthesia, these include superior postoperative pain relief, positive influence on breastfeeding and psychological advantages of being awake during the delivery.

Twelve hours after the surgery, Van Wieringen was walking around. She spent three days in postoperative care at Sunnybrook and says she felt very little pain, which was treated with medication during her stay in hospital.

While Van Wieringen had a positive birthing experience that empowered her, not all women may have access to the same pain relief measures, according to a recent study by Angle. Many rurally located hospitals are facing challenges associated with unequal access to obstetrical anesthesia care.

In 2009, Angle published a report in the *Canadian Journal of Anesthesia* that looked at the provision of anesthesia services, including epidurals, to pregnant women across Ontario. She found that in rural areas these services are often delayed or unavailable, giving rise to a two-tier maternity system in the province.

The study also explored the issues and barriers faced by physicians providing maternity anesthesia services in smaller community hospitals, and potential solutions to these barriers. Issues included too-few anesthesia staff, the need for ongoing mentorship and resources found in academic centres, and access to protocols to help physicians take up best practices in obstetrical anesthesia.

Vital anesthetic services that are part of the maternal newborn safety net within

the Canadian health care system include access to pre-labour and pre-caesarean medical consultations, use of epidurals for labour, management of post-caesarean pain and anesthetic risk management for critical cases during childbirth.

Angle says more than 50% of beds in high-risk maternal units in urban Ontario hospitals are occupied by women with low-risk pregnancies. Some of these women come for labour epidural pain relief that is often delayed or unavailable in rural hospitals.

Discussions with community physicians also identified a need for mentorship and continuing medical education in obstetrical anesthesia that is relevant to the needs of community practitioners. Angle has suggested linking university-based specialists from large urban hospitals with staff in rural hospitals through a knowledge transfer network that would provide support and help build education strategies.

“Even though this is a provincial study, it has national health implications,” she says. “If we can provide a minimum standard of care for women across the province, this could serve as a model for the country.” — Eleni Kanavas

Angle's work on rural community hospitals was funded by Ontario Women's Health Council, Sunnybrook Health Sciences Centre, the University of Toronto and Women's College Hospital.