

Innovative Labor Pain Management System

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Technology description

Coordinates Analgesic Application with Contraction Timing for Maximal Pain Relief

This groundbreaking labor pain management system releases analgesic medication based on contraction timing, relieving pain without severe neuromuscular blocking. Childbirth can be an extremely painful experience for women, many of whom tend to opt for medications that numb pain-sensitive nerves during labor. Although a variety of options exist for pain relief during labor, most women prefer to remain aware and in control during the birthing process. Epidural or spinal analgesics effectively manage pain, while allowing the recipient to remain conscious with minimal loss of muscle function. Intravenous analgesics (primarily opioids) are another, somewhat less effective, option for patients who cannot or choose not to have an epidural. Unfortunately, opioids are associated with many possible complications.

Researchers at the University of Florida have developed a system that successfully delivers analgesic pain relief to women in labor without the use of a spinal block. The system effectively manages pain by matching the application of the analgesic to the timing and intensity of contractions.

Technology

This labor pain management system safely coordinates pain relief administration with contractions to achieve greater effectiveness. The system employs a uterine activity monitor that anticipates the onset of a contraction and uses this information to trigger an audible, visual, or electronic signal, which helps time the application of short-acting analgesics so that their peak effect is coincident with contraction pain. Options for the analgesic used are numerous, including a short-acting intravenous opioid, inhaled nitrous oxide or other agent, or electrical stimulation.

Application area

System for managing labor pain with contraction-timed medication release

Advantages

Coordinates release of pain medication with contraction timing, maximizing patient comfort

Promotes rest without loss of muscle function, ensuring the patient can actively participate in labor while dramatically reducing pain

Provides accurate estimation of contraction intensities and lengths, releasing a precise amount of pain relieving agent at the optimal time

Reduces risk of side effects, maximizing safety

Institution

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