Pain management in Obstetrics

Rythmic™ Evolution & MicrelCare

Freedom without clinical compromise

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Even though labour and birth delivery are normal human experiences, they can at the same time induce a high level of pain.

With an increasing focus being placed on addressing pain in obstetrics and producing a higher degree of maternal comfort during and after labour, we design and develop drug infusion devices that enable an improved patient experience.

Background

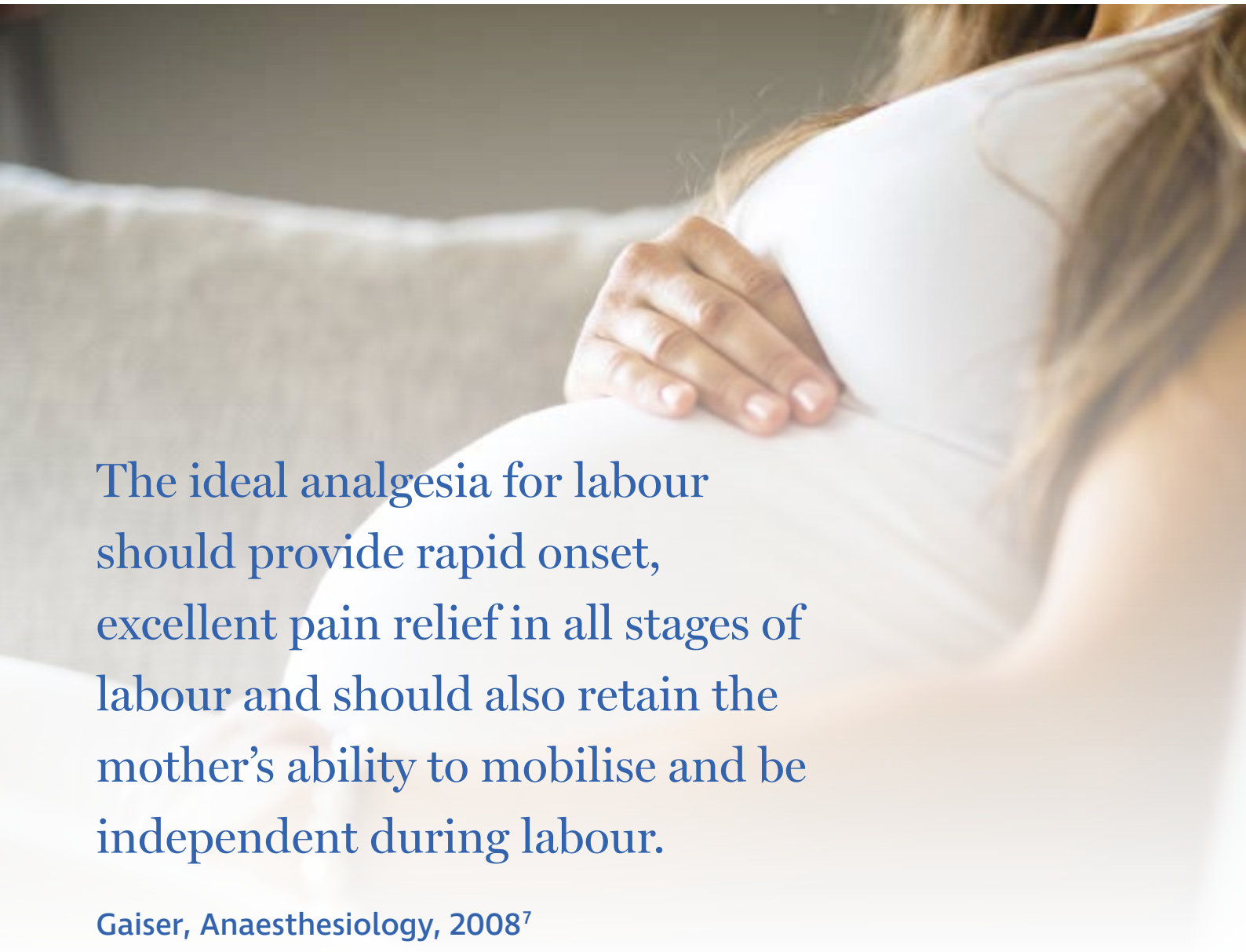
Epidural analgesia is an extremely effective and popular treatment for labour pain. [5]

Pain management
There is a constant need to address pain more effectively, especially breakthrough pain. [1, 2, 3]

Need for additional supplementation
Poor drug distribution and the consequent need for effective pain management often lead to more drugs administered to the patient. [4]

Possible complications of epidural analgesia
Maternal motor block may result to higher frequency of instrumental vaginal delivery. [5]

Improving the delivery experience
The mother should have the option to be as mobile and flexible as possible during and after childbirth. [6]

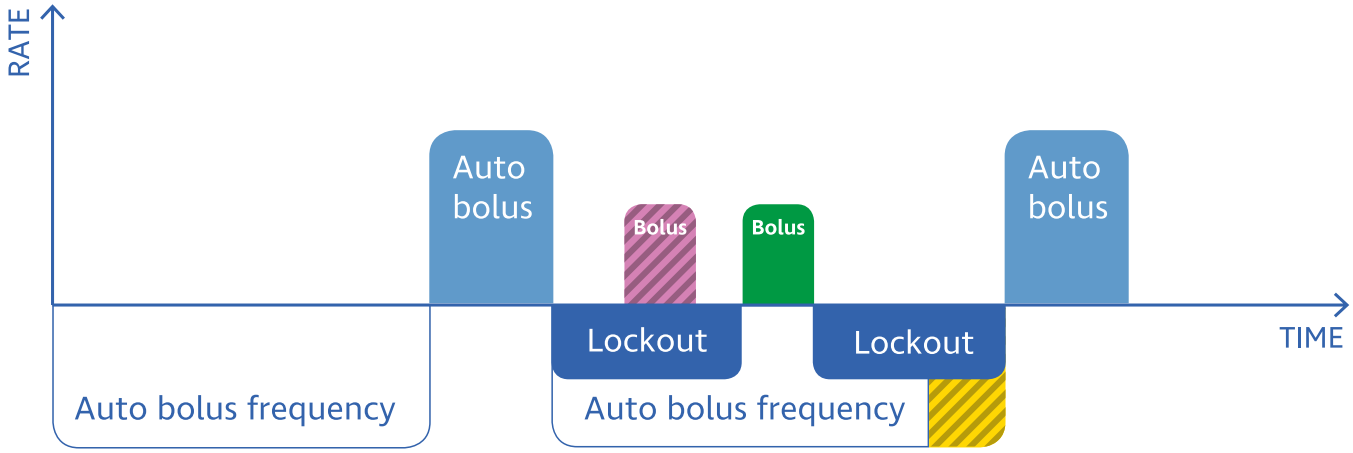


The ideal analgesia for labour should provide rapid onset, excellent pain relief in all stages of labour and should also retain the mother's ability to mobilise and be independent during labour.

Gaiser, Anaesthesiology, 2008[7]

Refining Pain Management For Labour Analgesia

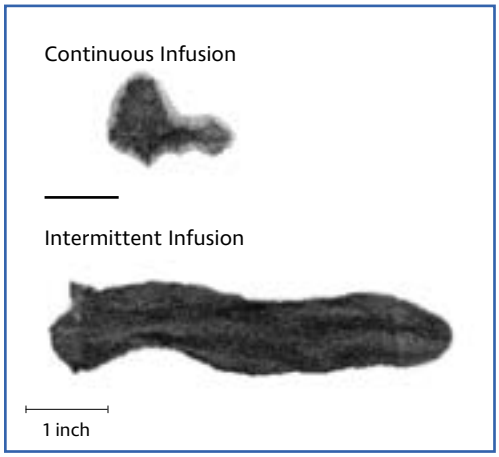
Rythmic™ Evolution is an ambulatory pump that incorporates the Programmable Intermittent Epidural bolus (PIEB) delivery mode which we call Programmed Automatic Bolus – (PAB). This delivery mode gives the ability to infuse automatically boluses with specified frequency in parallel to an optional basal rate and patient bolus.



Requested but not given because it was requested during lockout time

Given bolus

Auto bolus frequency extension up to end of lockout period



Area of diffusion of the contrast agent during continuous and intermittent infusions.[8]

PIEB allows the obstetric team to create a schedule designed to prevent pain before it escalates. This protocol has been shown in clinical trials to:

- Reduce labour duration.[9, 10]
- Provide better analgesia throughout labour.[11]
- Reduce complications, such as maternal motor block[10] and instrumental vaginal delivery, which can speed up recovery.[12]
- Reduce the incidence of breakthrough pain requiring supplementation.[9, 13, 14]
- Enhance medication distribution, which can lead to less amounts used without compromising patient comfort.[15]
- Ensure greater patient satisfaction. Mothers from the automated bolus group were also statistically more satisfied than those in the infusion group.[13]

Making mobility possible

Expectant mothers seeking to maintain mobility during labour have the option of receiving an epidural through an ambulatory pump. According to studies, mobility in labour has the following benefits:

- Moving is associated with less pain, better uterine contractions, and shortened duration of labour – specifically the first stage of labour may be approximately one hour and twenty minutes shorter for women who are upright or walk around.[6]
- Mothers have a more pleasurable overall experience.[16]
- The labour is smoother and with fewer complications, such as fetal heart abnormalities.[17]

Safety-first approach

NRFit™ compatibility

To prevent accidental administration of medication via the wrong route, Micrel Medical Devices has introduced NRFit™ connectors for the Yellow sets product range of Rythmic Administration Sets, validated to comply with the ISO 80369-6:2016 requirements for male Neuraxial luer connectors.

Protocol library on board

Built-in medication error prevention allowing titrations of the selected infusion protocol staying within pre-programmed safety limits.

Code protected pump

Programming and operations are protected by 3 levels of codes upon authorized user-level

Air in line elimination filter

Ensures that air trapped within the filter is not delivered to the patient

Anti-siphon valve

To prevent free flow, if the set is removed unclamped from the pump while still connected to patient

Micrelcare in obstetrics, a supportive tool during birth delivery

The **Rythmic™ Evolution** can be used as a stand-alone solution, but can also be used in combination with **MicrelCare**, our web-based monitoring platform. This enables remote monitoring and recording of the infusions' progress, bolus administrations and requests.

Get a near-time view of patients' infusion status and monitor them anytime and anywhere, bringing a new level of empowerment to both patients and the healthcare network, who can make truly informed decisions, faster.

MicrelCare at a glance

Always on
Wireless and mobile, automatically updated 24/7

Alerts
Clinical and device alerts via SMS and email

Patient pain evolution
Respond faster to patient needs

Infusion monitoring
Track volumes and delivered amounts

Autodocumentation
Transparency and patient file records

Bolus monitoring
Track bolus requested vs delivered

Easy Reporting
Quickly retrieve all-cohort data

Connectivity
MicrelCare is a versatile platform which supports integrated healthcare IT challenges in the organisation

Putting the patient first

Childbirth is associated with a variable degree of pain for the majority of women, requiring adequate pain management.[3]

In Micrel, we focus on developing solutions which enable Health Care Providers (HCPs) to deliver optimal patient care and provide elevated patient satisfaction.

Rythmic™ Evolution

Rythmic™ Evolution with the ability to use PIEB, enables greater mobility during childbirth, which may aid a timely birthing experience with less complications.

Rythmic™ Evolution is suitable both for ambulatory and pole mounted use. It is ultra-portable - small, lightweight and discreet, while it also includes:

Key Features

Intuitive programming
Simple set up of the pump

Fast infusion settings
All in one set, sets contain pre-assembled components avoiding additional connections

Various carrying solutions
Shoulder, banana bags and lock box. Also available to be pole mounted if required

Reducing unnecessary alarms
With air elimination filter, Rythmic™ Evolution is designed to reduce nuisance alarms

Interactive pain scores
Pain scores can be recorded in the pump also linked to bolus demands

Easy-to-read history menu
On the pump and display of graphs

Go forward with confidence

Every aspect of the Rythmic™ Evolution has been considered to ensure that it is designed with both patients and healthcare professionals like you in mind, and is a truly user-friendly infusion pump. We also offer support with implementation and online training to help users get the most out of their new device.

Our online training is available in multiple languages. The online support videos demonstrate how to use the devices in detail. It's an efficient way to supplement ongoing training of healthcare providers and support patients.

micrelmed-elearning.com

Advanced technical support

Repair per case
A technical service offered as standard and you pay per case

3 years*
Preventative maintenance
Benefiting the hospital biomeds and your budget

Device-specific training
Enabling biomedical engineers to undertake repairs in-house

Technical support helpline
We're on-hand to help when needed

Warranty extension
The ability to extend your warranty, for additional peace of mind

*3 years or 1000 days of operation, whichever comes first

Customer satisfaction

European customers reported being very satisfied with our performance:

✓ Easy to work with ✓ Implementation management & support ✓ Knowledgeable sales teams

Micrel customer perception survey. May 31 2018

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Discover a patient-centred solution

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go to **micrelmed.com**

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