

**VENTILATION PROVIDED BY BRAIN SIGNALS HELPS INFANTS
IN CRITICAL CONDITION**

Unique Case Reports Presented in Critical Care News

Stockholm, Sweden 27 April, 2009—Patient case reports from several hospitals show that a revolutionary technique for mechanical ventilation called NAVA can improve the interaction between the child and the ventilator. The NAVA approach to mechanical ventilation is based on the patient's neural respiratory output, and it is designed for use on adults as well as children.

The assisted breathing is driven by the patient's brain and it improves synchrony between the child and ventilator. Children in intensive care sometimes require a ventilator for breathing assistance and in some cases for survival. A cutting edge technology called NAVA (Neurally Adjusted Ventilatory Assist), developed by MAQUET Critical Care, allows the patient's own respiratory signals from the brain to the diaphragm to drive the ventilator, making it an effective instrument for recovery.

Professor Said Hachimi-Idrissi, University Hospital of Brussels, describes a particularly complex case involving a three-year-old with weak and rigid lungs, who had oxygenation problems as well as emphysema, where a lung transplantation was even considered: "She was a nightmare for all of the ICU staff, but we put her on NAVA, against all concepts of conventional ventilation, and she did well. Her neural response led to the pressures being reduced, and her oxygenation levels stabilized, and we were finally able to extubate her after one week on NAVA. We were all amazed."

With conventional mechanical ventilation, there is frequently a battle between the ventilator and the child. Some children fight the ventilator even though they cannot breathe properly on their own, often requiring deep sedation levels. With NAVA, the assistance is delivered as soon as the patient requires it. Furthermore, NAVA improves the synchrony between the patient and the ventilator.

Dr. Zhu Limin, Department of Cardiovascular Thoracic Surgery, Children's Medical Center in Shanghai, treated a two-month-old baby suffering from transposition of the great arteries and severe extubation difficulties with NAVA following a second surgery: "He was spontaneously breathing with NAVA for about three days, followed by successful extubation. One week later, we were able to finally discharge him."

When children are critically ill, it is sometimes hard to make the ventilator work in synchrony with the patients' weak attempts for breaths. NAVA, which is available on MAQUET Critical Care's SERVO-i ventilator, facilitates patient comfort by providing the required amount of assistance—not too much or too little—at the moment the patient needs it.

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PRESS RELEASE

MAQUET

“These case reports are testimonials to why NAVA is becoming an important tool in Critical Care Units in hospitals around the world,” said Dan Rydberg, Managing Director of MAQUET Critical Care in Solna, Sweden. “The greatest strength is of course that the patient’s own breathing is facilitated and that he or she has the potential to be taken off ventilation much earlier. A win-win situation for all parties involved.”

The NAVA case reports mentioned above, as well as other reports involving infants, children and adults can be found on www.criticalcarenews.com

ABOUT NAVA

The NAVA approach to mechanical ventilation is based on the patient’s neural respiratory output. Signals from respiratory control center in the brain are transmitted through the phrenic nerve to the diaphragm, where a catheter captures the electrical activity (Edi) and feeds it to the ventilator. The ventilator responds by providing the requested level of support to the patient. As the ventilator and diaphragm work with the same signal, the coupling between the two is virtually instantaneous

ABOUT MAQUET

The MAQUET Group is the global market leader for Medical Systems, focusing on the Operating Room (OR) and Intensive Care Unit (ICU). The integrated products of MAQUET are specially designed to deliver the best clinical treatment and the best therapy concepts within acute care hospitals. MAQUET provides innovative medical solutions from three Divisions: Cardiovascular, Critical Care, Surgical Workplaces.

MAQUET is a subsidiary of the publicly-listed Swedish group of companies GETINGE AB, a company with over 2 billion euros in revenues (2008 fiscal year) and 12,800 employees worldwide. In 2008 MAQUET itself generated pro-forma revenues (including the acquisition of Datascope Corp.) of over 1 billion euros. The company now has 5,000 employees in 34 international sales and service organizations, as well as a network of more than 200 sales representatives.

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