# Xavant launches breakthrough nerve stimulator for surgery

Xavant Technology, a medical device company specializing in the development and manufacturing of nerve stimulators, has launched a breakthrough nerve stimulator, the Stimpod NMS450. The Stimpod NMS450 accurately monitors neuromuscular blocking agents (NMBAs), or muscle relaxants, that are used in many surgical theater procedures. The device offers a marked advance over other methods of NMBA monitoring, thus improving patient safety and comfort
Xavant Technology is the first medical device company to use a three-dimensional accelerometer for monitoring NMBAs. This allows the anesthetist to begin monitoring immediately, with virtually no setup required, and to obtain accurate, consistent audiovisual feedback throughout the operation.

NMBAs are necessary to induce paralysis during certain surgical procedures, but often result in unpleasant muscular symptoms, such as extreme weakness or difficulty in moving, as the patient awakens. Because the Stimpod NMS450 allows the anesthetist to more accurately monitor the NMBA levels during the operation, adjustments can be made as needed, ultimately making things easier as the patient recovers from general anesthesia.

In order to monitor NMBAs, nerve stimulators are used to excite the patient's ulnar nerve, with a specific stimulation waveform called a train-of-four (TOF). As its name implies, the TOF consists of four impulses, and the twitching of the patient's thumb in response to these electrical impulses gives the anesthetist an indication as to the effectiveness of the NMBA drugs being administered. Traditional clinical assessment of these reactions consists of visually monitoring and/or feeling the reaction of the thumb, but this has been proven to be inaccurate by as much as 40%. Xavant's 3D accelerometry takes the guesswork out of the process, allowing accuracy rates within 3-4%- with noticeable benefits to the patient.

Says Roche van Rensburg, chairman of Xavant Technology "Studies have shown that quantitative acceleromyography monitoring reduces the incidence of residual blockade and symptoms of overall muscle weakness and improves patient satisfaction. With the introduction of our unique three-dimensional accelerometers, Xavant Technology makes ease-of-use objective NMBA monitoring a reality in the theater setting."

The Stimpod NMS450 is the only nerve stimulator featuring programmable repeat timers that allow the anesthetist to set up the unit for continuous monitoring. The device also features refractory period timers to ensure that the nerves are only stimulated at intervals allowing for proper nerve recovery. Without these refractory timers, the nerves could be stimulated before they have properly recovered from the previous stimulation, creating inaccurate results.

While other device manufacturers also offer accelerometry, it is only one-dimensional, meaning that the anesthetist has to first set up the unit so that the movement of the patient's thumb is in line with the dimension that the accelerometer monitors. It also means that if the patient is moved or bumped during the procedure and the orientation of the hand changes, the anesthetist has to redo the setup. That's not a problem with the Stimpod NMS450.

Corlius Birkill, CEO of Xavant Technology, notes that the Stimpod NMS450 is multi-functional and can also be used for nerve location and nerve mapping during regional anesthesia procedures, making it "a one-stop-shop" for an anesthetist. Besides improved accuracy and reduced setup time, the Stimpod NMS450 offers other advantages, including a lower capital outlay, a shorter learning curve, and a more compact and portable power source than ultrasound. Its main function, however, is NMBA monitoring.

The Stimpod NMS450 has US Food and Drug Administration (FDA) clearance and carries a CE Mark (to show compliance with European Union safety regulations). It also has CMDCAS registration for Canada and is listed on the Therapeutic Goods Association (TGA) in Australia. It is the flagship in Xavant's Stimpod line.

Xavant believes that as more clinicians become aware of the importance of more accurate monitoring (and the availability of more accurate monitoring devices), the quality of patient care should improve. In an editorial in the journal Anesthesiology (2011; 115: 946-954), the Mayo Clinic's Sorin Brull and Cleveland Clinic's Mohamed Naguib wrote that anesthesiologists have "continued to disregard obvious findings" showing that residual neuromuscular blockade is an important safety issue. Wrote Brull and Naguib, "Because we can in most instances 'get away' with our clinical assessment and intuition about the state of reversal of our patients, we have little incentive to spend extra resources on purchasing monitors...However, we must ask ourselves whether we are really doing the best for our patients when we cut corners."

With the availability of new compact technology, cutting corners isn't necessary. "With the Stimpod NMS450," says Dr. Dwayne Möhr MBChB (UP) DA (SA) MMed(Anaesthesiology) (UP) "the anesthesiologist now has a single unit that can perform objective NMBA monitoring during general anesthesia, and nerve locating and nerve mapping during regional anesthesia procedures. It's both easier and more accurate than other monitoring methods, and is another crucial step in ensuring patient safety."

Distributors, hospital groups, and clinicians wishing to find out more about the Stimpod NMS450 can contact Xavant through one of the channels listed below.

About Xavant:
Xavant Technology (Pty) Ltd is a leading supplier of nerve stimulators for regional and general anesthesia applications. The current Stimpod range has 3 models - the NMS410 and the NMS450 for regional and general anesthesia procedures, and the NMS460 which is used in the treatment of neuropathic chronic pain. The NMS410 model is a specialized nerve locating device, with its unique nerve mapping and

locating cable, used primarily during regional anesthesia procedures. The NMS450 adds the option to monitor neuromuscular blocking agents with its advanced three-dimensional accelerometer. The NMS460 model is a non-invasive neuromodulation solution for neuropathic chronic pain with patented pulsed RF technology. Currently the NMS product line is distributed in North America, South America, Europe, Australia, and Africa.

For more information see www.xavant.com [1]

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