First impressions of NAVA in adult patients

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First impressions of NAVA in adult patients

Carl-Johan Wickerts is head of a busy ICU ward at Danderyd Hospital in the city of Stockholm. He has been actively involved in respiratory research for a number of years, and was intrigued by the concept of Neurally Adjusted Ventilatory Assist.

Critical Care News recently met with Dr. Wickerts to discuss his early perceptions and experience of NAVA.
Can you describe the size of your department, average number of patients and staff here at Danderyd Hospital?

Our intensive care unit here is only about 3 years old, so the environment is quite modern and up-to-date. We currently have 8 ICU patient beds, but have recently expanded from 6 to 8 ICU beds. We operate a general ICU, treating primarily adult patients. We have two specialist physicians on staff on a daily basis, with additional interns and staff in training. Our total number of ICU personnel here is about 100, including physicians, nurses and licensed practical nurses. The length of stay is approximately 3 days, on average. Most patients are here for just one or two days, and a few patients may be here for much longer periods of care.

“We serve a population area of about 475,000 in this section of the city with some heavy industrial environments, and we have experienced increasing numbers of COPD patients and patients with other respiratory diseases in recent years.”

Which types of clinical situations and patient categories do you most frequently encounter?

Historically, we had a large infection clinic based here for the Stockholm area, so in the past, we had a large number of sepsis patients. Currently, we have primarily surgical cases, comprehensive surgeries, and post-surgical complications. We have a few trauma cases as well, but the other main patient category is chronic obstructive pulmonary disease patients. We serve a population area of about 475,000 in this section of the city with some heavy industrial environments, and we have experienced increasing numbers of COPD patients and patients with other respiratory diseases in recent years.

Which ventilation therapies do you normally use in these patient categories?

For the surgical patients, they are usually treated per-operatively with volume controlled ventilation, and post-operatively, if they remain intubated, we try to go over to pressure supported modes. We generally never use
volume controlled modes in the COPD patients, but primarily start out with non-invasive mask ventilation and pressure supported modes in these patients, to avoid intubation.

**When did you become familiar with the concept of NAVA and what led to your interest to initiate and test this therapy at your hospital?**

I first heard about NAVA at a lecture by Christer Sinderby at an international meeting several years ago. I have followed the development since then, and since I personally have been involved in respiratory research and development, as well as previous development projects for such things as ICU stations. I have a special interest for new and interesting generations of ventilation therapies, particularly those therapeutic developments that might reduce response times. But delays in triggering have always remained as a problem area. This is why NAVA as a concept was especially interesting to me. To have the possibility of ventilation without delay in response is an exciting opportunity.

**What are your first impressions of NAVA so far?**

That it works. We had initial concerns, especially in COPD patients with very flat diaphragms, that the signals would have been too weak. The first two COPD patients I treated both had severe emphysema, and in one case the signals were a bit weaker, but in the other very strong signals were obtained. We were able to ventilate both of these cases with NAVA for long periods of time, up to 18 hours, without any difficulties. I want to continue to get more experience of NAVA in this particular patient category. NAVA also worked well in the other patients we have treated so far, post-op surgical and acute myocardial infarction with cerebral infarction.

**What is your practical experience with placing and positioning the catheter?**

Once the catheter is in place at the diaphragm, it has not been difficult to obtain a good Edi signal. However in a few cases, we initially experienced difficulty to place and position the catheter through the esophagus, and we had a couple of experiences of the catheter doubling up on itself. Our experiences have contributed to the development of support tools to position and identify where the best signals can be obtained.

**What is your perception of the Edi curve?**

It has not been difficult to interpret these curves, once we have identified that the catheter is in the right place to obtain the signal. The curves have worked very well for us, so far.

**What are your current perceptions of NAVA as a support in weaning?**

We have been able to extubate most of our patients directly from NAVA, as a natural step in the weaning process. We have not experienced any difficulties in this respect; our experience so far is that NAVA works very well from a weaning perspective.
Biography
Carl-Johan Wickerts, MD, PhD, is chief of the intensive care unit of Danderyd Hospital, Stockholm, Sweden. He received his medical degree in 1978, and specialized in anesthesiology 1982, with European Diploma in Intensive Care Medicine (EDIC) in 1994. He obtained his doctoral thesis in clinical physiology at Uppsala University in 1991, and was appointed Assistant Professor in Anesthesiology and Intensive Care in 1997 at Karolinska Institute, Stockholm, Sweden.

References