BREAS | NEWSLETTER



News from the 14th International Conference on Home Mechanical Ventilation (JIVD 2015)

Following on the success of the former meetings (from 1989 for JIVD and 2004 for ERCA) and of the first joint venture held in Barcelona (2012) the organizers, once again, managed to put together a convivial gathering which was of great scientific and professional interest to all health professionals – physicians, allied health professionals, technicians, and home care providers – with an interest in respiratory care from the acute setting to home mechanical ventilation.

This year the congress went back to where it all started in 1989, the beautiful city of Lyon in France. It is there that over 1500 physicians, therapists and nurses gathered for a 3 day congress around the knowledge and understanding of respiratory issues, in order to ensure optimal patient care.

During one of the opening sessions on Thursday A. Cuvelier (Rouen, France) and L. Vignaux (Geneva, Switzerland) presented the evolution of home ventilators. The lecture was introduced by an overview of the history of HMV and addressed the advancement from a hardware and technical perspective, mainly focusing on the ongoing miniaturization and the fast change in battery technologies. The importance of monitoring possibilities was presented, describing the significance of monitoring the gas exchange (by oximetry and capnography), the respiratory mechanics (by measuring thoraco-abdominal movements, flow, pressure and volume) and the sleep quality under NIV. It was also made clear that as of today there are a number of new automated modes that make their appearance in the latest generation of devices, but these modes still need to prove their benefit in clinical practice.





Cesare Gregoretti from Turin, Italy presented the possible technical issues with NIV in pediatric pulmonary diseases. He favored the use of vented circuit application as these allow for a Vt measurement that is reliable in the presence of linear inspi-

ratory leaks compared to a non-vented set-up. They compensate better for additional leaks, possibly allowing a better patient-ventilator interaction and have a better reliability in case dual modes such as Target Volume are used.

Differences in the use of home mechanical ventilation

During the International round table discussion, Prof J Escarabill (Barcelona, Spain) shared some interesting figures on the differences that exist between countries on how home mechanical ventilation is used. The use of HMV for COPD patients is increasing very fast in many countries whereas it is only prescribed in a few cases in countries such as Holland, Sweden, Belgium, Canada, UK, Norway, Singapore and Australia. Another interesting finding is that within the countries participating in the survey, almost 75% of the patients have access to 24/24 phone support, but only 5% have access to telemonitoring services.

The relationship between PVA and nocturnal gas exchange

On Friday, N Hart (London, UK) and C Rabec (Dijon, France) focused their lectures on the nocturnal monitoring of NIV and the patient-ventilator interactions. N Hart stressed the importance of patient-ventilator asynchronies (PVA) as they may affect respiratory muscle unloading, gas exchange, dyspnea perception, patient discomfort and intolerance and reduce adherence to NIV. Dr Hart presented the first results of a study that investigated the relationship between PVA and nocturnal gas exchange. In the 28 patients studied, it was shown that PVA was observed in all patients (79% demonstrating severe PVA) with ineffective effort being the most common trigger asynchrony affecting 16% of all breaths. No correlation was found between PVA and the time spent with an SpO2<90% or a TcCO2>7kPa overnight.



Claudio Rabec, as one of the co-founders of the French SomnoNIV group, gave a clear overview on the different possibilities to monitor patients during nocturnal NIV and commented on when and why to prefer certain monitoring techniques compared to others. Dr Rabec stressed the fact that overnight SpO2 measure-

ment is necessary but not sufficient. Additional data such as TcCO2, information from the ventilator's software and assessment of inspiratory activity with thoraco-abdominal belts are sometimes needed to make a correct analysis of the quality of ventilation and identify causes of desaturation and patient-ventilator asynchronies.

Telemonitoring and Telemedecine

One of the hot topics during this year's JIVD was Telemonitoring and Telemedecine. A topic on which there are still too few high level studies as said M Vitacca (Gussago, Italy). There are some good studies on the follow-up programs for COPD patients, but evidence is lacking around the impact on its usage and outcome with NIV or HMV. In a randomized clinical trial published in the European Respiratory Journal, Vitacca and co-workers showed that there is no additional benefit of adding telemedicine to HMV in the group of non-COPD patients, whereas it gives additional benefit in the group of COPD patients. The most remarkable data in this field are the findings published by Hazenberg and co-workers in 2014, showing an economical benefit of 3000€/ patient when long-term mechanical ventilation was initiated at home with the help of telemonitoring compared to in-hospital initiation following the local procedures.

At the end of his talk on Initiation of NIV in adults, C Perrin (Cannes, France) concluded that ambulatory initiation of NIV or initiation at home are in progress because of economic advantages and technical improvements. That its feasibility has been demonstrated when skilled clinical staff and home care provider staff are involved. But of course for the more difficult cases there is a need to connect to specialized centers.

In a session around Severe Neuromuscular Disorders, J Gonzalez (Paris, France) spoke about the limits and difficulties of NIV in this challenging patient population. And his conclusion was loud and clear: the most difficult problem during NIV in these patients is related to the upper airway obstruction which needs to be evaluated and treated carefully.



Breas ´ booth at the JIVD

BREAS | NEWSLETTER



4 fantastic guest speakers, Doctors Gonçalves, Ishikawa, Bach and Chatwin, pictured here during the excellent Q and A session at the B&D Study day.

As always at JIVD this year's poster and free communication sessions contained a lot of important information and indicated new trends in future application and fields of research.

Some of the highlights:

A poster from A Vagner (Dijon, France) studied 123 nocturnal polygraphic recordings from patients under NIV and showed that abnormal events are frequent under NIV and are associated with daytime hypercapnia and nocturnal desaturation. Concluding that PG is useful to monitor NIV efficacy. A similar set-up was done at the University Hospital in Leuven (Belgium) by B Vrijsen who recorded full PSG in 23 ALS patients and studied sleep structure and patient ventilator asynchrony (PVA) during NIV in ALS. They showed that PVA is present but seems to have only minor impact on sleep fragmentation. Sleep stages have an effect on the occurrence of PVA, while leaks only have an impact on ineffective efforts in non-bulbar ALS patients.

The application of airway clearance techniques and devices were also a widely spread topic in many of the posters that were presented.

A Armstrong (Newcastle, UK) described an interesting case report of a C2 spinal cord injury patient where the use of a dual profile on the Vivo 50 allowed periods of spontaneous breathing, lung volume recruitment, reduced hospital admissions and improvement in quality of life.

Work performed in the St Georges Hospital in London by R Moses on the effect of oscillations during mechanical In-Exsufflation for patients with moderate-severe bulbar impairment showed that the addition of the oscillations improved the effectiveness without adverse reactions or laryngospasm.

The same team also showed that the provision of an MI-E device (NIPPY Clearway) for patients with neuromuscular disease can prevent future hospital admissions and is therefore a cost effective admission avoidance strategy.

All posters and abstracts can be found on: http://www.jivd-france.com/jivd/pdf/Abstracts_book.pdf

The B&D study day

As part of the NIPPY Respiratory Education Programme, B & D Electromedical organized a study day around Non-invasive ventilation & Mechanical Assisted Cough in patients with NMD. With the presence of Yuka Ishikawa (Japan), John Bach (USA), Miguel Gonçalves (Portugal) and Michelle Chatwin (UK) this study day was granted with an impressive panel of global experts who came to London to share their experience in this field. No wonder the study day was fully booked with 60 clinicians attending and their appreciation was shown by the average feed-back score of 4,5/5 which they gave for the study day.

The day started with a very comprehensive review by M Chatwin around "Long Term Non-invasive Ventilation in Pediatric NMD: Indications, impact on survival and transition to adult care". The speaker gave a detailed overview of the actual knowledge of NIV in children, based upon the Royal Brompton & Harefield NHS Foundation Trusts own experience (very recently published in PLoS One. 2015 May 1;10(5):e0125839) combined with a number of findings published by teams in Italy, Germany, US.

BREAS | NEWSLETTER

In a summary Dr Chatwin concluded that

- Home Long term NIV in children is increasing throughout Europe in a diverse diagnostic population
- Children requiring NIV should be managed in specialist centres with good communication to the local team
- The use of home long term ventilation has increase survival in children with life limiting conditions
- Adult services need to prepare for these children with complex needs and be aware of the new complications that occur with the changing natural history

In his first session of the Day John Bach gave an overview of his 30 years of experience with continuous noninvasive ventilatory support in neuromuscular disease. A story which clearly shows the increasing interest and possibilities NIV has in this patient population. And the success stories of Dr Bach prove that there multiple options available for patients that depend from LTMV. A view that was confirmed by Dr Ishikawa (National Hospital Organization Yakumo) who spoke about the way patients are followed and treated in Japan and how MI-E and NIV make a difference in the way the patients are treated today compared to years ago. In his lecture full of case reports and examples of his daily work at the Centro Hospitalar de São João (Porto, Portugal) Dr M Gonçalves shared his long experience with Mechanical Assisted Cough in Neuromuscular diseases. This exciting study day ended with an interactive Q&A session where all attendees could address their questions to the panel. Needless to say that this led to lively discussions where a lot of interesting ideas and tips were shared between the participants of this study day.

We are already looking forward to the next Respiratory Education Programme Advanced days planned by B&D which will cover topics such as Spinal Cord Injury, Acute management, Cystic Fibrosis and Paediatrics.



© 2015 Breas Medical – All rights reserved. Breas Medical reserves the right to make changes in specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your Breas representative for the most current information. Breas and the Breas logo are trademarks of Breas Medical AB. MAR-3015-v.1.0



Lifestyle medical devices™. Designed for humans.™

Breas Medical AB - Företagsvägen 1 SE-435 33 Mölnlycke - Sweden Phone +46 31 86 88 00 - www.breas.com

