VENTW

Respiratory monitoring during ventilation: how to adjust ventilation to the patient's needs

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Workshop

**IMPORTANT NOTICE: access to this workshop is limited to pre-registered delegates

About this session: This hands-on workshop will apply principles of respiratory monitoring to ventilation challenges in the OR and ICU. Participants will rotate around a series of workstations, each of them using clinical scenarios to illustrate the concepts covered and demonstrate their clinical use:

- Lung pressures: airway, alveolar, intrapleural and transpulmonary pressure and effects on the respiratory system compliance.
- Atelectasis or overdistension, stress index, strain and pendelluft including at the alveolar level.
- *Positive End-Expiratory Pressure* (PEEP) titration in *Acute Respiratory Distress Syndrome* (ARDS) and other situations, including oesophageal pressure monitoring and *Electrical Impedance Tomography* (EIT).
- Assessing intrinsic PEEP, dynamic hyperinflation, assessing the presence of expiratory flow limitation and adjusting pressures during ventilation.
- Work of breathing, muscle strength and fatigue, negative inspiratory force, P0.1, *Electrical Activity of the Diaphragm* (EAdi), *Neurally Adjusted Ventilatory Assist* (NAVA), rapid shallow breathing index, pressure time product, *Tension Time Index* (TTI). Reasons for weaning failure/success.
- Breathlessness, synchronisation with ventilation.

By the end of this course, participants will be able to:

- understand the physiology related to what can be monitored during controlled ventilation and apply this knowledge clinically.
- describe the relevance of monitoring in guiding the weaning from respiratory support.
- use ventilation monitoring to optimise respiratory support for each patient or disease, based on the application of physiological measurements to different lung conditions including ARDS, severe asthma, atelectasis, stiff lungs.
- use the applicable technology, including oesophageal pressure monitoring, pressure and flow wave forms, EIT, EAdi and ultrasound.

Sunday
26 May 2024
12:30 – 16:30
Room 2

Target audience: *Anyone interested in ventilation and understanding how its monitoring allows respiratory support to be optimised for each patient or disease.*

Chair: Lorenzo Ball (Genova, Italy)

12:30-12:40 **Introduction to the course and workstations**
Speaker: Lorenzo Ball (Genova, Italy)

12:40-14:20 **HANDS-ON SESSION 1: Respiratory monitoring during controlled ventilation modes in the OR and ICU**

25 min **Workstation 1: Respiratory system pressures**
Instructor: Gary Mills (Sheffield, United Kingdom)
Instructor: Cesare Gregoretti (Palermo, Italy)

25 min **Workstation 2: PEEP titration**
Instructor: Nuzhet Mert Senturk (Istanbul, Turkey)
Instructor: Vojislava Neskovic (Belgrade, Serbia)

25 min **Workstation 3: Atelectasis and hyperinflation**
Instructor: Gianmaria Cammarota (Perugia, Italy)
Instructor: Jakob Wittenstein (Dresden, Germany)

25 min **Workstation 4: Expiration and lung heterogeneity**
Instructor: Kris Bauchmuller (Sheffield, United Kingdom)
Instructor: Andrea Cortegiani (Palermo, Italy)

14:20-14:35 **BREAK**

14:35-15:35 **HANDS-ON SESSION 2: Respiratory monitoring during assisted ventilation modes in the OR and ICU**

15 min **Workstation 1: Weaning from invasive ventilation**
Instructor: Nuzhet Mert Senturk (Istanbul, Turkey)
Instructor: Vojislava Neskovic (Belgrade, Serbia)

15 min **Workstation 2: Oesophageal pressure in active patients**
Instructor: Cesare Gregoretti (Palermo, Italy)

15 min **Workstation 3: Advanced monitoring of assisted modes**
Instructor: Gary Mills (Sheffield, United Kingdom)
Instructor: Gianmaria Cammarota (Perugia, Italy)

15 min **Workstation 4: Adjustment of pressure support ventilation**
Instructor: Andrea Cortegiani (Palermo, Italy)

15:35-16:20 **Plenary: Advanced simulation in assisted modes**

16:20-16:30 **Round-up and final discussion**