VENTILATION and pulmonary diseases in the OR and ICU

VENTW
Respiratory monitoring during ventilation: how to adjust ventilation to the patient’s needs
**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.

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)
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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 Neskovski (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 Neskovski (Belgrade, Serbia)

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

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

**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**