VENTILATION GUIDED BY ELECTRICAL IMPEDANCE TOMOGRAPHY COURSE

ISTANBUL - March 24th & 25th, 2025
CASE - Acıbadem University

DIRECTOR:
Prof. Marcelo Amato, MD, PhD

VICE DIRECTOR:
Fernando Suarez-Sipmann, MD, PhD

PRESENTERS:

Joao Batista Borges, MD | Glaciele Alcala, PT, PhD
Michal Otáhal, MD, PhD and Mikulas Mlcek, MD, PhD

DESCRIPTION: Educational goals include theory and development of skills associated with basic principles of electrical impedance tomography, interpretation of EIT lung imaging, and collection and extraction of lung imaging data.

Course objectives:

1. Understand principles of electrical impedance tomography and its application for mechanical ventilation management

2. Assess recruitable lung collapse and overdistension with EIT

3. Understand clinical applications for the following:
   - Non-invasive therapies (high flow & CPAP)
   - Positioning strategies
   - Individualized PEEP
   - Hemodynamic assessment
   - Ventilator dyssynchronies
   - Lung perfusion assessment

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DAY 1
(March/24)

CASE: CLASSROOM and Animal Facility

8:30 - 9:00 am	**Welcome and course overview**
	Julide Ergil MD, PhD - Martin Ričl, Business and Marketing Director, Timpel Medical
9:00 - 9:30 am	**Chest EIT:** History and basic principles.
	Marcelo Amato, MD, PhD
9:00 - 9:10 am	**Q&A**
9:10 - 9:40 am	**Clinical applications of EIT ventilation image.**
	Fernando Suarez-Sipmann, MD, PhD
9:40 - 9:50 am	**Q&A**
9:50 - 10:20 am	**Assessment of recruitable lung collapse and overdistension.**
	Joao Batista Borges, MD, PhD
10:20 - 10:30 am	**Q&A**
10:30 - 11:00 am	**Assisted/ spontaneous ventilation guided by EIT.**
	Marcelo Amato, MD, PhD
11:00 - 11:10 am	**Q&A**
11:10 - 11:40 am	**Hands-On - EIT placement in a healthy volunteer (practice tips trick troubleshooting)** Physiological effects of HFNC and positive pressure in a healthy volunteer.
12:00 - 1:30 pm	**Lunch Break**
1:30 - 5:30 pm	**Hands-On stations with swine models monitored with EIT and esophageal manometry.**
	Marcelo Amato, MD, PhD | Fernando Suarez-Sipmann, MD, PhD
	Joao Borges, MD, PhD | Glaciele Alcala, PT, PhD | Mikulas Mlcek, MD, PhD | Michal Otáhal, MD, PhD

Animal Lab

Station 1	**Hands-On stations with swine models:** **PEEP titration in normal lung, obesity model and ARDS (Costa Method).**
	Marcelo Amato, MD, PhD | Fernando Suarez-Sipmann, MD, PhD
	continuing with lung lavages with high driving pressure

Animal Lab

Station 2	**Hands-On stations with swine models:** **Positioning: Lateral, prone, increased head elevation**
	Joao Borges, MD, PhD | Glaciele Alcala, PT, PhD | Mikulas Mlcek, MD, PhD | Michal Otáhal, MD, PhD

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DAY 2 (March/25)

CASE: CLASSROOM and Animal Facility

8:30 - 9:00 am	**EIT lung perfusion and pulsatility assessment**
	Fernando Suarez-Sipmann, MD, PhD
9:00 - 9:10 am	**Q&A**
9:10 - 9:40 am	**Principles of Pendelluft during mechanical ventilation**
	Marcelo Amato, MD, PhD
9:40 - 9:50 am	**Q&A**
10:20 - 10:50 am	**Overview from recent studies and clinical application of EIT.**
	Joao Batista Borges, MD, PhD
10:50 - 11:00 am	**Q&A**

Animal Lab

Station 1

Hands-On Stations with swine model:
Ventilation Dyssynchrony detection (Pendelluft, breath-stacking and double-cycling).

Joao Borges, MD, PhD | Fernando Suarez-Sipmann, MD, PhD | Mikulas Mlcek, MD

Animal Lab

Station 2

Hands-On stations with swine model:
Lung perfusion assessment using EIT:

Marcelo Amato, MD | Glaciele Alcala, PT, PhD | Michal Otáhal, MD, PhD

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