

Hospital Clinic of Barcelona Program for EACTA Thoracic Exchange Training Programme



The Anaesthesiologists of the Cardiothoracic Section of Hospital Clinic are a group of dedicated Anaesthesiologist who work exclusively with the Thoracic surgical patients.

Aim: to improve the knowledge in thoracic anaesthesia.

Clinical activity: The Trainees would attend to the different procedures, depending on the weekly activity. Individual schedule will be planned according to personal preferences and what is considered most interesting at that time for the trainees. A proposal of schedule can be seen below.

1. **Daily thoracic surgery operating room**, (including same-day admission / ambulatory surgery)
 - a. Lung / segmental / wedge /sleeve resections (open / VATS)
 - b. Tracheal resection surgery and high-frequency jet ventilation
 - c. Use of ECMO under special circumstances in thoracic patients
 - d. Mesothelioma and hyperthermic chemotherapy
 - e. Lung ultrasound and transesophageal echocardiography
 - f. Mediastinoscopy
 - g. Pleural surgery
 - h. Sympathectomy
 - i. Pancoast surgery
2. **Interventional pulmonology:** including EBUS, cryo-biopsy, fiberoptic bronchoscopy (once every two weeks)
3. **Pre-anesthetic assessment:** (once every two weeks)
4. **Prehabilitation clinic** includes CPET assessment and exercise training (once every two weeks),
5. **Post-operative care:** in PACU and intensive care (daily)
6. **Acute postoperative pain**, controlled by Pain Section (ward round once every two weeks)

Proposal of schedule for trainee exchange program for a couple of weeks

Week (1)	Monday	Tuesday	Wednesday	Thursday	Friday
8:00:00	OR Thoracic surgery	Department teaching	OR Thoracic surgery	OR Thoracic surgery	Thoracic surgery patient overview OR Thoracic ambulatory surgery
8:30:00		OR Thoracic surgery			
9:00:00					
10:00:00					
11:00:00					
12:00:00				Pre-anesthetic assessment	
13:00:00					
14:00:00					
15:00:00		Dictated teaching: general principles of thoracic anaesthesia			
15:30:00	Prehabilitation unit				
16:00:00					
Week (2)	Monday	Tuesday	Wednesday	Thursday	Friday
8:00:00	OR Thoracic surgery	Department teaching	OR Thoracic surgery	OR Thoracic surgery	Thoracic surgery patient overview Interventional pulmonology (EBUS)
8:30:00		OR Thoracic surgery			
9:00:00					
10:00:00					
11:00:00					
12:00:00			CPET Assessment	Pain Ward Round	
13:00:00					
14:00:00					
15:00:00	Dictated teaching: advanced topic in thoracic anaesthesia				
15:30:00					
16:00:00					

Table 1: proposal of schedule for trainee exchange program for 2 weeks. Timetable will be adapted according to surgical program and individual preferences if possible.

Objectives of the exchange rotation: gaining knowledge in thoracic anesthesia, being exposed to a wide variety of clinical scenarios, including both conventional thoracic surgery and VATS. This training aims to improve knowledge regarding all of the following:

1. Assessment and patient preparation for thoracic surgery.

2. Advanced knowledge of airway management:

- a. Lung isolation management (double lumen tubes or bronchial blockers as Arndt B. Cohen, EZ Blocker, Uniblocker / Univent, Coodpech, ...)
- b. Pulmonary separation management (double lumen tubes with or without embedded camera)
- c. Checking airway devices by FB or embedded camera into the endotracheal tube or double lumen tube
- d. Methods to facilitate intubation in thoracic surgery:
 - Intubation by fiberoptic bronchoscopy (FB)
 - Use of intubating introducers (e.g. Eschmann, Frova, ...) and facilitating intubation cannulas (e.g. Williams, VAMA, ...)
 - Intubation by video laryngoscope (with or without channel)
 - Exchange Catheters using double lumen tubes and /or orotracheal tube
- e. Safe extubation methods

3. Advanced knowledge of assisted ventilation in thoracic surgery:

- a. Outline the basic physiologic principles of OLV
- b. Apply one-lung ventilation strategy according to the principles of protective lung ventilation and open lung approach: Tidal volume - PEEP titration - Recruitment maneuvers - FiO_2 - Respiratory rate - Pressure-controlled ventilation vs Volume controlled ventilation
- c. Hypoxemia during one-lung ventilation: Incidence, risk factors for the development and treatment
- d. Appropriate ventilation management after lung resection: gradual re-expansion

4. Analgesia methods in thoracic surgery:

- a. Thoracic epidural blockade
- b. Ultrasound-guided paravertebral blockade
- c. Intercostal blockade
- d. Other locoregional blockages
- e. Multimodal analgesia protocol

Educational

1. Attendance at the department education sessions: once weekly, 8:00 am (surgical activity starts at 9:00am on Tuesday).
2. Attendance at the Thoracic Surgery weekly patient overview. Review of the patients scheduled for the following week. Held on Friday 8:00, surgical activity starts at 9:00PM in ambulatory surgery.
3. Thoracic anesthesia teaching: first week: teaching of basic principles of thoracic anesthesia. Second week: teaching of advanced thoracic anesthesia (airway/ventilation/analgesia/research) according to trainee's preferences

Research

- Basic introduction of research methodology and basic knowledge of clinical research will be available to discuss with the trainee.
- Our group is currently involved in the following studies

1. Cost-effectiveness of a multimodal prehabilitation program in high-risk patients undergoing to lung resection: A randomized clinical trial
2. Participation in PROtective ventilation with high versus low PEEP during one-lung ventilation for THORacic surgery PROTHOR: A randomized controlled trial. (PROTHOR)
3. Participation in iPROVE-OLV (individualized perioperative open lung strategy during one-lung ventilation)
4. Implementation of ERAS program.
5. Assessment of pulmonary physiology in the postoperative period in thoracic surgical patients

[More information and link to the registration form:](#)

<http://www.eacta.org/education/thoracic-exchange-training-programme>