BeRS ACADEMY

PULMONARY FUNCTION COURSE

MODULE I

General topics and obstructive disorders

Part 1: Online presentations with MCQs.

1.1 Reference values

Prof. Wim Janssens (KULeuven)

General concepts, normal and abnormal values and lower limit of normal, severity, determinants of reference values, obstruction, restriction, GLI concept.

1.2 Spirometry – Slow and forced vital capacity manoeuvres – Flow-volume loop

Prof. Shane Hanon (VUB)

Equipment, physiologic basics behind configuration of flow volume loop and volume time curve in healthy subjects and in disease, ATS/ERS criteria, standardisation and how to report results, contra-indications, measurement technique and pitfalls, obstructive, restrictive and mixed disorders, specific patterns, reversibility (definition and measurement).

1.3 Bronchoprovocation testing (methacholine, histamine, adenosine, exercise)

Prof. Renaud Louis (ULiège)

Bronchial hyperresponsiveness, direct and indirect stimuli, methodological aspects and procedures, expresion of results (PC20 and PD20), clinical utility/relationship with asthma control, effects of bronchoconstriction on lung function parameters effects of drugs (ICS) on bronchial hyperresponsiveness.

1.4 Physiology of static lung volumes, compliance

Prof. Eric Derom (UGent)

Pressure-volume relationship and elastic recoil of the respiratory system and its different components (lung, thoracic wall, ribcage, abdomen/diaphragm), physiologic determinants of static lung volumes, effect of disease (restrictive and obstructive disorders) on pressure-volumes relationship, lung compliance, closing volume, methods to measure static compliance.

1.5 Body plethysmography (TGV-Raw)

Prof. Ellie Oostveen (UAntwerpen)

Description of equipment, physiological basics behind the measurements, pitfalls of measurements, manoeuvres, measurement of lung volume and airway resistance, ATS/ERS standardisation, clinical relevance and interpretation of lung volume and resistance in pathology, ATS/ERS standardisation.

1.6 FRC measurement using multiple breath techniques: the Helium dilution and the N2 wash-out technique

Prof. Eric Derom (UGent)

Definition, method of calculation, principle of Helium dilution and equipment. Principle of N2 wash-out and equipment, quality control, difference with body plethysmography, ATS/ERS standardisation.

1.7 Resistance Measurements (oscillometry)

Prof. Ellie Oostveen (UAntwerpen)

Definition, description of equipment, physiological basics underlying the measurements, pitfalls of measurements, basics of oscillometry and clinical interpretation/potential, difference with other methods to assess airways obstruction.

1.8 New techniques to assess airways inflamation

Prof. Lieven Dupont (KULeuven)

Rationale, basics, methodology and clinical relevance, use in disease monitoring of FENO, induced sputum, VOCS in pulmonary disease.