The Rocc module for measurement of airway resistance in children and uncooperative patients

Application

- Pneumology
- Pediatric Department

Related Products

- Pony FX

Validation


- Interrupter technique (Rrs, int)
- High reproducibility and correlation with body plethysmography tests
- Ideal for testing non collaborative, critically ill patients and children
- Simplified test manoeuvre
- Easy to disinfect
- Scientifically validated

The COSMED Rocc module allows the measurement of airway resistance through the interrupter technique (Rrs, int). This test can represent a good alternative to body plethysmography, because it requires low patient collaboration and limited capital investment.

The patient is just required to breathe spontaneously through a mouthpiece while an occlusion valve interrupts the airflow for 100 msec. The occlusion is virtually imperceptible to the patient, but long enough to allow the instantaneous measurement of the pressure at the mouth, back extrapolate the alveolar pressure and thus calculate the airway resistance.

The simplicity of the interrupter technique is particularly appreciated with non-collaborative patients (critically ill, acute asthma, geriatric and unconscious patients, neonates, pre-school children).

The interrupter technique is based on the principle that the alveolar pressure (Pa) is closely linked to the pressure at the mouth (Pm) during a transient airflow interruption. Airway resistance (kPa/l/s) is thus the ratio between the pressure at the mouth (identical to the alveolar one) and flow value before the interruption. This technique has been proved to be highly reproducible and correlated against the "Gold Standard" body plethysmography.

The COSMED Rocc module consists of a special handle incorporating a dedicated low flow PNT and an occlusion valve. All these components can be easily disinfected and antibacterial filters can be used to eliminate the risk of cross contamination.

Bronchial dilation tests may also be performed and results stored and printed together with predicted values in a comprehensive graphic and numeric format.

Operator may choose to actuate the occlusion valve or let the microprocessor automatically randomize the flow interruptions.
Real time Rocc test (Firmware Screenshot)

Complete configurability of flow trigger (ml/s) and of the back extrapolation algorithm (t0, t1, t2) (Firmware Screenshot)

Technical Specification

Measured Parameters
- Rocc_ex, Gocc_ex, Rocc_in, Gocc_in, Trigger Flow, Bronchial challenge

Hardware
- Flowmeter: dedicated low flow PNT
- Power: no power required
- Back extrapolation algorithm: free customization of t0, t1, t2 and Trigger flow

Standard Packaging includes:
- Rocc PFT Unit, 2 Pneumotachographs, 5 antibacterial filters, 2 Nose Clip, Start Up Guide

Bibliography