



Disposable Impedance Adaptor (DIA)

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Overview

Measuring the mechanical properties of the respiratory system in patients on mechanical ventilators is currently widely performed by measuring pressure and flow delivered by a mechanical ventilator. However, when a patient is partially breathing for themselves, accurate mechanical parameters cannot be determined. The current practice is to apply additional oscillatory activity to the airflow entering the lungs such that their frequency content lies in a range above that encompassed by the regular ventilation waveform.

The DIA is the first device that solves these problems conveniently, while isolating the subject from the equipment generating the perturbations

Invention

The DIA consists of a **disposable device** connecting the proximal end of the endotracheal tube and the tubing of the mechanical ventilator. **The DIA provides a controlled oscillatory perturbation of the airflow delivered to the patient while simultaneously measuring the pressure and flow at the entrance to the endotracheal tube using pressure transducers that are embedded within the DIA.** The flow perturbations are generated by applying oscillatory pressures to a flexible membrane that provides a physical barrier between the pressure source and the airflow entering the patient's lungs.

DIA Components

- Disposable Connector
- Oscillatory Pressure Source
- Computer-Data Collection

Advantages

- Only system capable of convenient, ongoing assessment of respiratory mechanical function
- Provides accurate measure of impedance, including in patients with active respiratory muscles
- Disposable
- Integrated into patient's ventilator

Applications

- Forced oscillation instrument manufacturers
- Respiratory device/equipment manufacturers
- Critical Care, Neonatal & Ambulatory Care settings

I.P. Status

PCT Filed
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