



Case #538

Optimization of ARDS Ventilation with Real-Time Respiratory Mechanics Monitoring

Currently there are no drugs available for acute respiratory distress syndrome (ARDS), an often fatal condition, and the only treatment consists of supportive therapies, mainly mechanical ventilation. A patient can make a full recovery if they are properly ventilated, but mechanical ventilation can further damage the already injured lung tissue, leading to ventilator induced lung injury (VILI), which often leads to death. There is a need for improved ventilation that considers the individual patient's current lung condition, state of damage or recovery, and the underlying cause of the ARDS.

At UVM, researchers have developed a diagnostic tool that uses a new mode of mechanical ventilation, called variable ventilation, to optimize the management of patients with ARDS. The technology monitors a patient's lung parameters over time, which provides personalized, real-time information on the patient's lung mechanical properties to optimize ventilation strategies. By reducing lung injury and optimizing oxygenation levels, the complications of ARDS can be reduced and mortality rates improved.

Applications:

- Management of therapeutic ventilation of ARDS patients.

Advantages:

- Monitors lung mechanical function in real-time.
- Provides personalized ventilation treatment.
- Improves mortality rates for ARDS.

Intellectual Property and Development Status:

US Non-Provisional Application US20160360996A1

Looking for research collaboration and licensing opportunities.

References:

Variable Ventilation as a Diagnostic Tool for the Injured Lung. Smith BJ and Bates JH PMC4576346

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