

EFFECT OF RMT ON DRUG DELIVERY USING DRY POWDER INHALERS



COPD patients have to live with reduced respiratory functions every day – and, as a result, they often have to invest in treatment options to help keep them as healthy as possible. One of these options might be an inhaler of some sort to use when function is especially bad. When using inhalation devices, COPD patients have to overcome the initial airflow resistance for optimal inspiratory flow and drug delivery. Some persons with COPD do not have sufficient peak inspiratory flow (PIF) to overcome the airflow resistance of some dry powder inhalers.

In today's blog, we're going to look at a study that attempts to find a way to increase PIF in order to help COPD patients receive effective treatment. Accordingly, the study discussed tested specific respiratory muscle training

(RMT) as a means to increase PIF in COPD patients with low PIF, and to optimize inhaler use and drug deposition.

Key Findings

- Reduced peak inspiratory flow (PIF) in COPD patients may prevent them from overcoming the initial airflow resistance for optimal inspiratory flow during drug delivery using dry powder inhalers.
- 8 weeks of respiratory muscle training (RMT) improved the PIF in COPD patients with insufficient PIF and enabled patients to overcome airflow resistance.

Patient Impact

RMT improves PIF in COPD patients and supports optimal drug delivery.

Study Methods

After analysis of PIF in COPD patients, those with insufficient PIF underwent specific inspiratory muscle training (SIMT) for 8 weeks. PIF and ability to overcome airflow resistance in commonly used inhalers was tested again after training and compared to a control group.

Study Results

Respiratory muscle training in COPD patients with low PIF significantly increased PIF. This enabled patients to overcome airflow resistance in dry powder inhalers.

Respiratory muscle training by SIMT increases PIF in COPD patients. This enables COPD patients with low PIF to optimally use dry powder inhalers. RMT therefore leads to optimal drug delivery and distribution from dry powder inhalers in COPD patients.

References

Weiner P, et al. Inspiratory Muscle Training May Increase Peak Inspiratory Flow in Chronic Obstructive Pulmonary Disease. Respiration 2006;73:151–156.