Effect of Humidification on Titration Pressures in Obstructive Sleep Apnea

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In Submission.

KEY POINTS:
- The use of ThermoSmart™ Technology led to a titrated CPAP pressure 10% lower than conventional humidification.
- The lower titration pressures seen in this study could be explained by the higher levels of absolute humidity leading to a reduction in nasal airway resistance.

METHODS:
- Twenty sleep apnea patients were randomized to either ThermoSmart™ or conventional humidification (a humidifier without a heated breathing tube).
- The participants underwent two full nights of Polysomnography (PSG), one on each type of treatment.
- A strict titration protocol was followed on both study nights which also included the use of the same sleep facility, technician and masks.

RESULTS:

<table>
<thead>
<tr>
<th>CPAP Pressure (cmH2O)</th>
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<tbody>
<tr>
<td>Conventional Humidification</td>
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<tr>
<td>9.8</td>
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</table>

KEY:  
- Orange: ThermoSmart™ (Heated Breathing Tube)  
- Gray: Conventional Humidification

CONCLUSIONS:
- In this study, the use of ThermoSmart™ Technology led to a CPAP titration pressure on average 1.1 cmH2O lower than conventional humidification.
- The use of ThermoSmart™ Technology not only lowered titration pressure, but also improved some objective sleep measures.