

LETTERS TO THE EDITOR

Auto-titrating CPAP for the treatment of obstructive sleep apnea in children: APAP and CPAP pressures were not that close

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Khaytin et al¹ compared the pressures attained during continuous positive airway pressure (CPAP) titration with those attained during auto-titrating positive airway pressure (APAP) use. They reported that $P_{PEAKMEAN}$ and P_{90} during APAP use were not significantly different from the optimal CPAP titration pressure P_{PSG} .

Sixty-six of 110 (60%) patients started on APAP were excluded from the study because they did not or could not use their APAP within 90 days of CPAP titration (or because they did not have an adequate CPAP titration). Were there many APAP failures because patients were unable to tolerate and use it? That would not be entirely surprising because pressure changes during APAP use cause arousals,² which may negatively affect its use. Improvement in adherence has been reported in patients who are having adverse effects or inadequate response on APAP upon being switched to CPAP.³ In evaluating whether APAP can replace CPAP in children, patients unable to use APAP should be considered a failure of APAP pressures to be equivalent to P_{PSG} rather than being excluded.

Lower and upper limits of APAP pressures were chosen based on clinical experience and any available prior titration data. Use of prior titration data introduces a bias in favor of APAP pressures being similar to P_{PSG} . Despite that, P_{90} was within 1 cm of P_{PSG} in only 38% and within 3 cm in 68% of participants. $P_{PEAKMEAN}$ was within 1 cm of P_{PSG} in only 25% and within 3 cm in 68% of participants. Within 3 cm (-3 to +3) is a substantial range of 6 cm of water. Such a range is wide enough potentially to include unacceptable pressure at one extreme, through optimal pressure, to a pressure that results in treatment emergent central apneas in susceptible individuals at the other extreme. APAP use in one third of participants resulted in pressures that were not even within 3 cm of P_{PSG} , despite excluding patients who could not use APAP.

Their Figure 2 [comparison of titration pressure (P_{PSG}) and autoCPAP P_{MEAN} , $P_{PEAKMEAN}$, and P_{90} pressures] suggests that 50% of patients had a P_{PSG} between 7 and 11 cm. A pressure of 9 cm for every patient may well be as close to P_{PSG} as $P_{PEAKMEAN}$ and P_{90} , yielding results as close to P_{PSG} as APAP determined pressures.

Considering that P_{PSG} is the optimal pressure, the finding that most APAP pressures, even after excluding APAP failures, were not within 1 cm of the P_{PSG} may not inspire confidence in the use of APAP in children.

CITATION

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