

The Practice of Bypassing In-Laboratory PAP Titration During Treatment of Obstructive Sleep Apnea: A Breach of our “Do No Harm” Oath?

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Short Communication

In recent years, largely dictated by third party payer policies there has been a paradigm shift in terms of utilization of in-laboratory positive airway pressure (PAP) titration studies. In-laboratory PAP titration study to determine the effective PAP setting to treat obstructive sleep apnea (OSA) is considered the gold standard practice. Unfortunately, these studies are expensive, time consuming and labor intensive. Now there has been a trend towards directly prescribing auto-titrating PAP devices to patients once they are diagnosed with OSA, foregoing in-laboratory PAP titration studies.

The AASM has issued a standard level statement cautioning against use of auto-titrating PAP devices in patients with congestive heart failure, chronic obstructive pulmonary disease, obesity hypoventilation syndrome and those with central sleep apnea syndromes [1]. What about empiric use of these devices in patients free from such clinical comorbidities? While auto PAP devices have many salient features that make them an excellent treatment option for obstructive sleep apnea, they have their own unique set of limitations [2]. While cost cutting in health care expenditures is inevitably permeating all disciplines in practice of medicine, a comprehensive reassessment of our current practice of often bypassing in-laboratory PAP titration study for patients diagnosed with OSA is imperative.

Certain undesired phenomena occur with use of unattended auto titrating PAP devices, although these can occur with use of fixed PAP devices as well during attended in-laboratory titrations. The first is the emergence of an iatrogenic breathing disturbance called treatment emergent central sleep apnea (TECSA). TECSA is a polysomnographic phenomenon characterized by emergence of central apneas and hypopneas during PAP titration after obstructive events have significantly resolved [3]. TECSA may cause sleep fragmentation. It is considered to be a transient phenomenon lasting few weeks to few months. Thus, some patients may continue to have symptoms related to TECSA despite use of PAP device at home, solidifying their conviction that PAP devices do not help with the common symptoms of sleep apnea such as snoring, fatigue and daytime sleepiness. Unfortunately, many such frustrated patients would discontinue using their PAP device before TECSA fully resolves over time.

It has been noted that APAP devices may underestimate the net effective pressure required to eradicate obstructive respiratory events and tend to overestimate the pressure delivered at the upper airway, leading to higher mask leak [4]. Air leak in particular has been associated with sub-optimal adherence to APAP therapy [5].

Unfortunately, in a PAP naïve patient, his first experience with PAP device could be his last experience if he is experiencing new symptoms with use of PAP device (such as air leaks, sleep fragmentation and non-restorative sleep) in addition to persistence of daytime symptoms (such as fatigue and excessive daytime sleepiness). An opportunity to do in-laboratory titration is an opportunity to capture if a particular patient is at risk of developing air leak and TECSA. Such patients can then undergo mask refits and pressure readjustments, reassured about transient nature of TECSA and their PAP adherence can be closely followed.

Oxygen desaturation while using PAP device is another issue. While central apneas are not typically associated with significant oxygen desaturation, occasionally protracted episodes of central apneas can occur with PAP usage and could be associated with critical drop in oxyhemoglobin saturation, which can make use of PAP devices in such patients detrimental [6]. An opportunity to do in-laboratory titration is an opportunity to capture appearance of treatment related central apneas, record the duration of these central apneas and the associated degree of oxygen desaturation. Based on baseline severity of OSA and patient's symptoms, a decision may be made to use non-PAP based treatments (positional therapy, oral appliance or oral pressure therapy [7]) if frequent and profound oxygen desaturations are noted.

Attended, in-laboratory PAP titration can provide invaluable information about how well a patient is suited to be using the PAP device. More problems surface and are acknowledged when one actually undertakes the titration study than can be anticipated based on hypothetical speculation. Considering that most patients with OSA will require PAP treatments for their lifetime, it only seems fair to at least allow them the opportunity to undertake one attended in-laboratory titration study at the beginning of this arduous journey of using PAP device nightly for the rest of their lives. More likely than not, this will enhance their PAP experience and adherence in the long term. By providing the opportunity to witness any undesirable events that unfold during that titration study it will allow us, the healthcare providers to educate and in certain instances “do no harm” to our patients, in cases where such a possibility exists.

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