

Managing Sub-Optimal Responders through Combination Therapy

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One of the more significant challenges faced by all who have provided oral appliance therapy (OAT) for any length of time is how to deal with the sub-optimal responder. Despite valiant best attempts at providing therapeutically effective treatment, many of our patients have either excessive residual apnea-hypopnea indexes (AHIs) or residual symptoms at the point of maximum appliance titration. It is not our fault, not the patients' fault, and not the fault of our appliances. The simple fact is that the make-up of some patient's disorders is such that there is not a one solution answer for their therapy. It has become apparent over time that in many instances it is necessary to combine therapies to come up with an effective management solution for some of our more resistant patients. It is very common to combine OAT and positional therapy, surgery, or positional therapy. This article will focus on the combined utilization of OAT with continuous positive airway pressure (CPAP) therapy.

Many patients come to us after they have been non-receptive or non-responsive to prior CPAP therapy. Many of these patients fail therapy due to issues related to complications from excessive pressure. The pressure necessary to effectively ventilate some patients is beyond their ability to cope with the resultant side effects. Through the use of a combination of OAT and positive airway pressure (PAP) therapy, it may be possible to manage a large number of our patients who were sub-optimal responders to OAT.

The principal challenge in providing combination therapy is the simple fact that we are not able to predict for which patients we will need to utilize it. Consequently, a policy of discussing this issue with all patients prior to instituting OAT should be considered. The patient should be informed that a best attempt will be made to manage their disease process via the oral appliance. If, however, their response to therapy is inadequate, they are informed that a combination solution for their disease management will be suggested. Patients are often far more accepting of this necessity if they have been advised of it in the beginning.

Given that a percentage of patients are likely to need combination therapy, the choice of appliance design becomes significant as some appliance designs lend themselves more readily to combination use. The intake procedure should include a discussion of the patient's prior attempts at PAP therapy and what challenges or issues they encountered. Included in this interaction is a discussion regarding what interface the patient's prior PAP device utilized. If the patient previously wore a nasal interface, pillows, or mask, consider an oral appliance that provides either for mounting of a nasal armature or at a minimum provides for a "locked" bite to minimize

the need for a chin strap. If the patient presents a history of being an obligate mouth breather and had previously used a full face mask, consider using an appliance that provides for an open anterior architecture and an "unlocked" bite. In many instances with an open appliance, if combination therapy becomes necessary, posterior occlusal pads can be provided to slightly open the vertical and provide more freeway space in the anterior. By starting with the end in mind and selecting the oral appliance with combination therapy as a possible end necessity, the practitioner is far less likely to have a situation where the appliance is rendered inappropriate by the need to integrate with pressure therapy.

It is crucial that the treatment outcomes of appliance therapy be adequately quantified. Whether through the use of multi-night nocturnal oximetry, home sleep test (HST) or polysomnography (PSG), it is crucial that the effectiveness of the appliance be established. Using the AADSM guidelines for effective management, if the patient has residual AHI in excess of half of pre-treatment AHI or above 10, the patient is advised that a sub-optimal result has been obtained and combination therapy is recommended. If the patient is receptive to considering this treatment regimen they are referred back to the sleep physician or the sleep lab with a request for a PAP titration study in the presence of the oral appliance. It is at this point that the need for accurate and concise communication with the other professionals becomes tantamount. It is crucial that all parties understand that the oral appliance has been maximally titrated and is being used in this mode to reduce the airway resistance for this patient to hopefully permit lower effective pressure on the PAP device. Used in this manner, significant reductions in PAP pressures may be routinely obtained. These reductions in pressure need will often result in a much greater likelihood of the patient tolerating PAP therapy.

Recently a new approach to combination therapy involving the use of automatic positive airway pressure (APAP), in lieu of in-lab PSG or HST, for the titration component has been utilized. There is increasing pressure from third party payors to reduce utilization costs and make diagnostics more approachable for a greater number of patients. In this mode, the patient merely wears the dental appliance with the APAP and the titration is managed via the pressure algorithms built into the unit. The data stream is then available for the sleep physician to interpret and access what pressure parameters to use for each patient. The upside of this approach is obvious in regards to the cost savings for reduced need for in-lab studies and HSTs. Additionally it could be postulated that the larger sample size as a function of more nights of data may in fact lead to a more representative picture of the patient's condition.

It is quite possible that we are very likely going to see a greater dependence on remote data collection of this type as the sophistication and reliability of the units improves. It certainly behooves us to find ways to adapt our treatment modalities to successfully interface with these newer treatment modes. The future success of dental professionals in this arena depends on our ability to be nimble and adapt to new technologies as they emerge.

CITATION

Bell GM. Managing sub-optimal responders through combination therapy. *Journal of Dental Sleep Medicine* 2016;3(4):111–112.

SUBMISSION & CORRESPONDENCE INFORMATION

Submitted for publication June, 2016

Submitted in final revised form September, 2016

Accepted for publication September, 2016

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DISCLOSURE STATEMENT

Dr. Bell has indicated no financial conflicts of interest.