

Winter 2015

Dear Colleague:

I hope this quarters newsletter finds everyone in good health and spirits. As always I genuinely appreciate your support and look forward to continuing to help you improve the quality of life for your patients.

This quarters newsletter covers the following topics...

1. Masticatory and Cervical Muscle Tenderness and Pain Sensitivity in a Remote Area in Subjects with a Temporomandibular Disorder and Neck Disability

2. A 2-year Mean Follow-up of Oral Appliance Therapy for Severe Obstructive Sleep Apnea

3. Prevalence of Residual Excessive Sleepiness During Effective Oral Appliance Therapy for Sleep-disordered Breathing

4. Craniofacial Characteristics of Influence of Oral Stabilization Appliances in Intra-articular Pressure of the Temporomandibular Joint



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Regards,

Dr. James Metz

(TMD) and healthy controls. Twenty female subjects were diagnosed with chronic TMD, and 20 were considered healthy. Subjects completed the Neck Disability Index and Limitations of Daily Functions in a TMD questionnaire. Tenderness of the masticatory and cervical muscles and pain sensitivity in the hand were measured using an algometer. Appropriate statistical analysis evaluated differences in muscle tenderness between groups and compared pain sensitivity in the hand between groups. Significantly increased masticatory and cervical muscle tenderness and pain sensitivity in the hand were found in subjects with TMD when compared with healthy subjects. Moderate to high effect sizes showed the clinical relevance of the findings.

The results of this study have highlighted the importance of assessing TMD patients not only in the craniofacial region but also in the neck and other parts of the body. Future studies should focus on testing the effectiveness of treatments addressing the neck and the pain sensitivity in the hand in patients with TMD.

A 2-year Mean Follow-up of Oral Appliance Therapy for Severe Obstructive Sleep Apnea

Haviv Y, Bachar G, et al.
Oral Dis. 2014 Sep 10 111-118

Oral appliances for treating severe obstructive sleep apnea are recommended for patients who failed to comply with continuous positive airway pressure treatment. The objective of this study was to evaluate medium-long-term outcome and success rates of oral appliances in patients with severe obstructive sleep apnea. A retrospective study including 52 obstructive sleep apnea patients with an apnea-hypopnea index ≥ 40 , who did not tolerate continuous positive airway pressure treatment, were enrolled and fitted with a modified Herbst oral appliance. A two year mean follow-up including a second somnography was conducted in 36 of the patients.

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Masticatory and Cervical Muscle Tenderness and Pain Sensitivity in a Remote Area in Subjects with a Temporomandibular Disorder and Neck Disability

Silveira A, Armijo-Olivo S, et al.
J Oral Facial Pain Headache. 2014 Spring; 28(2):138-46

The purpose of this study was to compare the masticatory and cervical muscle tenderness and pain sensitivity in the hand (remote region) between patients with temporomandibular disorders

A 2-year Mean Follow-up...continued

A significant reduction in the apnea-hypopnea index was demonstrated between the initial somnography (55.25) and the followed one (17.74). Overall, 57.7% of total study subjects and 63.9% that had sequential somnography continued using the device. The reduction in apnea-hypopnea index in the user group was 42.4, which was significantly higher than in the non-user group (28.9). Moreover, 53% reached apnea-hypopnea index of less than 15. *Oral appliances were found to be successful for treating severe obstructive sleep apnea after first-line treatment had failed.*

Prevalence of Residual Excessive Sleepiness During Effective Oral Appliance Therapy for Sleep-disordered Breathing

Verbruggen AE1, Dieltjens M2, et al.
Sleep Med. 2014 Feb;15(2):269-72

Oral appliance therapy with a mandibular advancement device (OAm) can yield to complete therapeutic response (apnea-hypopnea index [AHI]<5 events/h), though some patients show little or no improvement in daytime sleepiness. The prevalence of residual excessive sleepiness (RES) despite effective treatment with OAm therapy is unknown. The authors in this study wanted to determine the prevalence of RES in patients treated with a titratable custom-made duobloc OAm. A prevalence study was performed, collecting data from 185 patients with an established diagnosis of sleep-disordered breathing (SDB) under OAm therapy with a titratable custom-made duobloc device (baseline data were male:female ratio, 129:56; age, 48 years; body mass index [BMI], 27 kg/m²; Epworth Sleepiness Scale [ESS] score, 10; and AHI, 19 events/h). A full-night polysomnography was performed at baseline and after 3 months of OAm therapy. Daytime sleepiness was assessed using the ESS with RES defined as an ESS score of 11 or higher out of 24, despite complete therapeutic response.

Out of 185 patients, 84 patients (45%) showed a complete therapeutic response with an AHI of <5 events per hour after

3 months of OAm therapy. Despite this normalization of AHI, 27 out of these 84 patients (32%) showed RES and had a significantly higher baseline ESS (15 vs. 9) and were younger (43 vs. 47) compared to patients without RES. *RES under OAm therapy showed a prevalence of up to 32% in SDB patients effectively treated with respect to AHI. Patients with RES were younger and had higher baseline daytime sleepiness.*

Influence of Oral Stabilization Appliances in Intra-articular Pressure of the Temporomandibular Joint

Casares G, Thomas A, et al.
Cranio 2014 Jul;32(3):219-23

This study analyzed the intra-articular pressure in the upper compartment of the temporomandibular joint (TMJ) under different functional conditions. The influence of stabilization appliances on intra-articular pressure was studied. Seventy-four joints from 64 patients (55 women and 9 men; mean age: 43.2 years; range: 19-61 years) with TMJ disorders were examined. Only 50 joints passed the inclusion criteria. Intra-articular pressure was measured using a 21G needle inserted into the joint and connected to a pressure transducer. Pressure was measured with the jaw in the following positions: at rest, maximal mouth opening, clenching in maximal intercuspal position, and clenching with an oral interocclusal appliance.

Fifty joints were included in the study (without blood reflux), mean pressure at rest was negative (-6.06 mmHg); when the mouth was opened to its maximal position the pressure was lower (-26.09 mmHg). Mean intra-articular pressure was higher in the maximal intercuspal position (58.56 mmHg). When an interocclusal appliance device was fitted, mean intra-articular pressure reduced its value by 31.24%, which reached a mean value of 40.56 mmHg. There were no significant differences in sex. The group over 45 years old had higher pressure values in maximal open mouth position than the group of patients under 45 years old. *The authors concluded that interocclusal appliances can reduce pressure in the upper compartment of the TMJ and improve functional status of the joint.*