411. Obstructive sleep apnoea: clinical aspects II

P3914

Autonomic cardiac modulation response due to the use of an oral appliance to treat OSA – Pilot study

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Introduction: Obstructive sleep apnea (OSA) alters autonomic variability during sleep and wakefulness. Little has been shown about the possibility of achieving the cardiac balance using a mandibular repositioning appliance (MRA).
Objective: To evaluate the effect of MRA to treat OSA on heart rate variability (HRV) prior and after 6 month of the device usage.
Methods: Eight OSA patients with no co-morbidities were enrolled in this study. Patients reported snoring, nocturnal breathing arrests, tiredness upon awakening and difficulty in concentrating. The inclusion criteria was present at least a 7.0mm maximum protrusion, 40.0mm of mandibular opening, 08-10 teeth in each arch, periodontal health. Treatment consisted of using the oral appliance during approximately 06 months. Polysomnography and HRV analysis were performed before and after the treatment.
Results: The AHI was reduced from 45.6±9.0 to 10.0±2.7 ($p<0.05$), the mean SaO2nadir increased from 73.3±10 to 88.0±4.5 ($P<0.05$) and REM% increased from 18.6±4.6 to 22.0±3.4 ($p<0.05$), the sleep stages1,2,3 and sleep efficiency showed no statistical significance. The frequency–domain parameter were significant for both Fast Fourrier Transform and Wavelet spectral method only in parasympathetic area, which improved from 197.0±70.0 to105±34.0 ($p\leq0.05$) and from 221.0±85.0 to 102.0 to 33.0 respectively ($p\leq0.05$). The RR interval improved from 776.0±54.0 to 792.0±45.0 but was not significant.
Conclusion: The oral appliance used in this work was effective in respiratory events and tended to improvement of cardiac autonomic modulation, as reflected by changes in heart rate variability. Further evaluation with a larger sample is needed.

P3915

Evaluation of the relations between the obstructive sleep apnea syndrome and obesity by standard antropometric obesity indexes

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Introduction: Obesity is an important risk factor in the development of obstructive sleep apnea syndrome (OSAS).

Aims and objectives: To investigate whether the general body adiposity or local lipoidosis was a risk factor in the evolution of OSAS by examining the relationships between the anthropometric obesity indexes such as waist (WC) and neck circumference index (NC), body mass index (BMI) and OSAS in Turkish adult population, and to access the possible differences by gender.
Methods: The records of 499 subjects were examined retrospectively. The data related to polysomnographic, demographic and anthropometric indexes of the subjects were recorded. The patients whose apnea-hypopnea index were ≥5 was determined as OSAS group.
Results: Of the subjects who underwent polysomnography; 431 (86.37%) were OSAS. The avarage BMI, NC and WC of OSAS group were statistically higher than the control group ($p<0.001$).
According to logistic regression analysis; BMI, WC and NC enlargement were observed as significant risk factors for OSAS development. Risk coefficients were determined 5.53 for NC, 4.48 for WC and 2.22 for BMI.
Cut-off point values for anthropometric obesity indexes as OSAS determiner were recorded as below: BMI for male >27.77kg/m^2 and female >28.93kg/m^2, NC index for male >40cm and female >36cm, WC index for male >105cm and female >101cm.
Conclusions: BMI, WC and NC enlargement were determined as significant risk factors for OSAS development. This was an initial study to determine the cut-off points of which increase the OSAS risk in BMI, WC and NC index in Turkish adult population.

P3916
Validation of a new auto adjusting bilevel algorithm in complicated sleep disordered breathing patterns
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Introduction: OSA patients are increasingly affected by high pressure demands, coexisting central events and periods of hypoventilation. Fixed bilevel treatment could fail due to changing pressure demands or non-compliance. To facilitate treatment a new bilevel device with auto-trilevel principle and fixed backup rate was developed. We validated therapeutic efficacy and subjective comfort.
Methods: In a multicentre, open, controlled trial 26 patients with complicated sleep disordered breathing were analyzed. After diagnostic PSG patients were treated with an automatic bilevel device (SOMNOvent auto-S®/Weinmann Germany) which automatically adapts pressure levels within defined PDiff- (IPAP-EPAP diff.) and EEPAP-limits.
Results: 26 patients (7 f, 59±12 y, BMI 35.9±7.3 kg/m^2) were analyzed. Compared to the diagnostic night AHI decreased significantly from 45.5±32.7/h to 2.2±2.7/h ($p<0.001$). Obstructive and central apneas dropped significantly (33.0±28.4 vs 1.5±2.2, $p<0.001$ and 2.1±3.9 vs 0.1±0.4, $p<0.001$, respectively). ODI sunk from 33.4±25.1 to 10.2±12.0 ($p<0.001$). Respiratory arousals lowered from 15.0±15.0 to 0.7±1.5 ($p<0.001$). The majority of patients rated the bilevel device as good (14) or very good (6). The different clinical centres considered the auto adjusting device mostly equal or superior to the conventional therapy.
Conclusion: The novel bilevel algorithm proved to treat sleep related breathing disturbances in our patients comfortably and at least as effective as manual bilevel settings. Continuous automatic adjustment to the changing pressure demands might provide a therapeutic benefit. Further investigations are recommended to find out which type of patients benefit most.

P3917
Alternative method for non-invasive automatic positive airway pressure therapy in OSAS patients
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Introduction: APAP has generally been accepted as an alternative to CPAP in the treatment of OSAS. Meta-analysis has shown that APAP can control OSAS as effectively as CPAP. It remains to be examined whether greater reductions of the mean pressure can be attained by using the lowest possible minimum level and by limiting the maximum pressure to a different extent [1].
Objective: The aim of this study is to investigate whether a new adjusted mode of APAP lowers the mean applied pressure so compliance will increase.
Method: New diagnosed OSAS patients are selected for a single blind randomized cross-over trial. Patients receive for 12 weeks two different PAP therapies, CPAP and restricted APAP (RAPAP). Prior to starting up PAP therapy patients receive a manual CPAP PSG titration. The titration night is used to set the CPAP and RAPAP. The RAPAP pressure is set 2 cmH_2O around the titrated pressure [2]. After 6 weeks there is a transition to the other PAP therapy. Data is collected by questionnaires like ESS, Quebec Sleep Questionnaire (QSQ) and SF-36, REMstar Auto (Respironics) data, and home polygraphy.
Results: 39 OSAS patients were recruited of which already 21 completed the study. After 6 weeks with RAPAP, the mean QSQ, ESS and AHI was improved significantly. Similar effects were achieved with CPAP. Compliance showed similarities between therapies (RAPAP: 6.6 [4.3–7.9] hr/night, p=0.13). The mean applied pressure during RAPAP was 8.5 [6.0–11.5] cmH_2O and for CPAP 8.5 [5.5–12.4] cmH_2O (p=0.17).
Conclusion: Analysis of 21 patients showed that RAPAP and CPAP therapy has similar treatment effects in OSAS patients. RAPAP fits the current therapy.
References:
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P3918
Detection of bed-exit events using a new wireless bed monitoring assistance
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Objectives: To assess the capability of using Heasys, an innovative wireless bed monitoring assistance that records body movements, presence and temperature, in the detection of bed-exit events and body position changes at night.
Design: Descriptive study.
Settings: Sleep laboratory for patient's recording and home for healthy volunteers.
Participants: Twelve patients referred for suspicion or treatment of sleep disordered breathing and 5 healthy subjects.
Measurements: Complete polysomnography was recorded during one night in patients and during two nights in healthy volunteers. Heasys sheet was placed under the fitted bed sheet to allow concomitant recording. During the second night, healthy subjects were asked to get out of bed at least 2 times for a minimal duration of 3 minutes.
Results: Heasys allowed the detection of all bed-exit events in patients and volunteers (sensitivity: 100%, and specificity: 85%). When bed-exit events were defined by the lack of the presence signal combined with absence of motion and a dip in temperature, sensitivity and specificity of Heasys were 92 and 100%. In patients and volunteers, Heasys detected body position changes recorded by polysomnography respectively in 84 and 98% of the cases. Additional recorded motions were mainly related to leg movements or arousals.
Conclusion: In this small feasibility study, we can conclude that Heasys is an effective innovative device allowing bed-exit events detection in adult patients and healthy volunteers.

P3919
Reliability of apnea/hypopnea index (AHI) determined by two different auto-CPAP in patients with obstructive sleep apnea syndrome (OSAS)
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Current Auto-CPAP devices retain information on their use, pressure, leaks and respiratory events and can operate also as CPAP. We evaluated reliability of AHI values recorded by two devices (Auto-Set Spirit II - 22 pts and REMstar auto M series -15 pts) as compared to those recorded by the Embletta, in a group of 37 consecutive adults with OSAS (mean age: 58 yrs; 14 F; BMI range: 24-61). Each patient underwent the following procedures: a. baseline ambulatory recording by Embletta; b. 3-7 nights recordings by Auto-CPAP; c. 3-7 nights recordings by CPAP; d. ambulatory recording by Embletta while using CPAP titrated on the basis of the Auto-CPAP records. Respiratory events were assessed by manual analysis of Embletta traces or based on at least 4 nights records of Auto-CPAP devices. We selected only nights during which patients used the device at least 5 hrs and leaks were < 0.5 L/s. Baseline AHI ranged between 9 and 91 ev/hr. The 95th percentile airway pressure as determined by the Auto-CPAP device was 9.5±1.5 cmH2O. The AHI measured by CPAP during 4 nights was 3.9±1.7 (AI: 1.2±1.2; HI 2.8±1.8).The AHI during CPAP was 2.2±2.1 (AI: 0.7±1.6; HI:1.5±1.7). Difference plots for Bland and Altman analysis were 1.7 for AHI, 0.4 for AI and 1.3 for HI. Mean difference between AHI values measured during CPAP and measured by Auto-Set Spirit II and REMstar auto M was significantly different (2.32 vs 0.76; $p<0.015$). The results of this study suggest that AHI values measured by CPAP in OSAS are reliable as compared to those measured by a portable recorder and that small but significant differences exist between different CPAP devices.

P3920
Effects of reduced lung volumes and age on oxyhemoglobin nocturnal desaturation in obstructive sleep apnea patients before and after CPAP treatment
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Aim: To analyze determinants of nocturnal desaturation in obstructive sleep apnea (OSAS) patients before and after CPAP treatment.

Protocol: We studied 102 consecutive OSAS patients aged 58±10 yrs (M/F 80/22), with Apnea-Hypopnea Index (AHI) 49±20 reduced at 4.5±7 after treatment with 11±2 cmH20 CPAP, titrated with autoCPAP at home. Respiratory function and blood gas analysis (BGA) were performed, BGA and a sleep study was repeated after 1 month treatment.
Results: Mean nocturnal SpO2 (SpO2mean%) and nocturnal time spent with SpO2 <90% (T<90%) were correlated to AHI ($p<0.001$), body mass index (BMI, $p<0.001$), Functional Residual Capacity (FRC% pred, $p<0.003$) and PaCo2 ($p<0.03$). A stepwise regression individuated AHI and FRC%pred ($r=0.56$ $p<0.001$) as independent predictors of T<90% and ($r=0.53$ $p<0.001$) SpO2mean%. In obese (BMI>30) respect to normal subjects AHI was slightly increased (45±20 vs 52±20, NS) whereas FRC%pred ($p<0.013$), PaO2 ($p<0.02$), SpO2mean% ($p<0.002$) were significantly lower with T<90% increased ($p<0.02$). In this subgroup AHI and FRC%pred independently predicted T<90% ($r=0.59$, $p<0.001$), whereas in patients with normal BMI T<90% was independently predicted by AHI and age ($r=0.65$, $p<0.001$). After treatment SpO2mean increased from 90.6±3.9 to 94.4±1.6 ($p<0.001$) and T<90% reduced from 35±26% to 6±10% ($p<=0.001$); both correlated with AHI post treatment ($p<0.027$) and basal PaO2 ($p<0.04$).
Conclusions: AHI is the main determinant of nocturnal desaturation in OSAS patients. Reduced lung volumes in obese patients can significantly worsen desaturation whereas age is an independent determinant of desaturation in lean patients.

P3921
Early, short and long-term efficacy of the new American Academy Sleep Medicine (AASM) protocol for CPAP titration in patients with obstructive sleep apnea (OSA)
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CPAP titration is usually performed during attended polysomnography. CPAP is adjusted throughout the recording period to determine the optimal pressure for maintaining upper airway patency. The aim of the present study was to assess the efficacy in 3 different setting: night of titration, after 3 and l2 months. We enrolled 298 consecutive patients (M 205, age 57.7±12.4 yrs, baseline AHI 48.3±25.8). Once obtained a good acclimatization to mask, patients underwent manual CPAP titration according to new AASM protocol. Titration failed in 56 patients (TF). Baseline, in comparison with patients successfully titrated (ST), TF showed a lower sleep efficiency (80.9±13vs 74.9±18%, $p<0.01$), N3 (24.8±12.5 vs 20.3±16.5, $p<0.05$) and REM percentage (17.8±7.8 vs 14.1±8.9, $p<0.01$). During titration, TF presented a lower sleep efficiency (67.1±19.1 vs 75.6±13.7%, $p<0.01$), N3 (23.2±12.7 vs 27.8±10.7, $p<0.01$) and REM percentage (11.3±6 vs 16.7±7.9, $p<0.01$) than ST. ST and EF patients differs for the tolerance to CPAP at titration: 90% of ST patients reported optimal or good tolerance in comparison with 72.% of EF (χ^2 15.4, $p<0.01$). 141 patients completed the short term follow-up and 76 the long term follow-up: 29 patients showed persistent OSA at 3 months and 13 at 1-year follow-up. No statistically significant differences were found between patients with or without persistent sleep apnea for age, baseline sleepiness, baseline or CPAP titration polysomnographic indices, tolerance to CPAP therapy or type of mask. We conclude that CPAP titration is more common in patients with more unstable sleep and with lower tolerance to ventilation.

P3922
Overnight oximetry as a screening tool for moderate or severe obstructive sleep apnoea
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Background: With increasing prevalence of obesity, the burden of obstructive sleep apnoea (OSA) on public health services will increase. It is estimated that 4% of middle-aged men have significant OSA. Current SIGN guidelines for OSA recommend treatment with CPAP if the apnoea hypopnoea index (AHI)≥ 15/hr or oxygen desaturation index (ODI) ≥10/hr. It would be of both clinical and economic benefit, if a simple test like overnight oximetry could be used to screen the patients for moderate or severe OSA.
Aims: To assess the sensitivity of ODI≥10 in diagnosing moderate and severe OSA. To assess if other parameters are associated with AHI ≥15/hr in patients with ODI <10/hr.
Method: We retrospectively collected data from the medical notes and respiratory polysomnography studies (Visilab) of 250 patients, who were suspected to have OSA. ODI, AHI, Mallampati grade, Epworth Sleepiness Score (ESS) and pulse rate variability were recorded.
Results: 102 patients out of the total of 250 had moderate or severe OSA. 77% of these had ODI ≥10/hr. Mallampati grade was recorded in 75 patients: 84% had grade >2. In patients with ODI <10/hr but AHI ≥15/hr (22.56%), 85% of the patients had Mallampati grade >2. AHI correlates significantly with ODI ($r=0.82$, $p<0.0001$).
Conclusion: More than three quarters of the patients with moderate or severe OSA could have been diagnosed by using overnight oximetry. Mallampati grade >2 appears to predict the presence of significant OSA, even when ODI is <10/hr. However, 23% of the patients had significant OSA despite a low ODI and would have been undiagnosed on oximetry alone.

P3923
Treatment adherence with CPAP for obstructive sleep apnea is influenced by mask leak
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Aims: To investigate the effect of mask leak on adherence with CPAP therapy in patients with obstructive sleep apnea syndrome (OSAS).
Methods: We studied 63 patients (mean Age 55±11yrs, mean BMI 36±7kg/sqm, mean AHI 48±30/hr, ESS 11±5) who received fixed or auto-adjusted CPAP treatment for OSAS at our institution. All patients underwent a standardized educational session and mask fitting by experienced staff. Data on treatment adherence and mask leakage was collected for approximately 6 months after initiation of CPAP.
Results: Mean ± standard deviation days of CPAP use was 176±82 days, percentage of days with CPAP usage 84±18%, and percentage of days with at least 4 hours CPAP use/night 71±24%. There was a significant inverse relationship between CPAP adherence using Kribbs criteria and average time spent with mask leak per night ($r=-0.362$, $p<0.01$). Patients with good adherence ($n = 42$), defined as CPAP use > 4 hours per night on at least 5 days per week, were compared with those who used their device less frequently ($n = 21$). There were no significant differences between baseline characteristics, residual AHI or therapeutic CPAP pressure between groups. Patients with poor CPAP adherence, however, had significantly higher average mask leakage flow (39±8 litres/min vs. 34±6 litres/min, $p < 0.01$) and higher time spent with mask leakage per night (3.7±6 min/night vs. 7.7±10 min/night, $p < 0.05$) than those with good adherence.
Conclusion: Mask leakage may influence treatment adherence with CPAP for OSAS.

P3924
Reliability and validity of the Romanian version of the Epworth sleepiness scale
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The Epworth Sleepiness Scale (ESS) is a self-administered eight-item questionnaire that is widely used in English countries for assessment of daytime sleepiness in adults. The aim of this study was to investigate the reliability and validity of the ESS in the Romanian language.
Methods: The ESS was administered in 3 groups: 1) patients with SDB (n=157); 2) healthy controls (n=65); and 3) bilingual individuals (n=47). Consecutive patients aged 18 to 75 years who underwent a sleep study were recruited. The ESS-Ro scores of 65 subjects with mild to severe obstructive sleep apnoea (OSA) were compared with the ESS-Ro scores of 65 healthy. To determine the linguistic interchangeability between translation and the original questionnaire, we applied the two scales in a group of 47 bilingual individuals.
Results: In the group of the healthy bilingual individuals (control group), the mean scores on the ESS-Ro and the original ESS were 5.89±2.9 and 5.81±3.1 ($p=0.6$) showing good reproducibility between translation and the original scale ($p<0.001$). All correlations except for item-6 were statistically significant. The control group had lower ESS-Ro scores than subjects with sleep-disordered breathing (5.7±3.0 vs 10.1±4.1, respectively; $p<0.001$). Total score and individual item score were correlated in both groups. A total of 157 SDB subjects were enrolled into the validation study in a prospective manner. The ESS-Ro presented an overall reliability coefficient of 0.71 which indicates a good internal consistency. The ESS-Ro scores were significantly correlated with AHI ($r=0.192$, $p=0.01$).
Conclusions: The Romanian version of ESS is a reliable and valid tool for screening patients with daytime sleepiness.

P3925
Factors affecting compliance in OSA patients treated with APAP
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Introduction: Continuous positive airway pressure (CPAP) is an effective treatment for symptomatic moderate-severe obstructive sleep apnoea (OSA). More recently, automatic positive airway pressure (APAP) devices are being used instead on the premise that variability in device pressure would improve compliance although this has not been proven.
Aims: Evaluate 3 month compliance in OSA patients treated with APAP
Identify factors affecting short and medium term compliance
Methods: Symptomatic patients with OSA [Apnoea hypopnoea index (AHI) >10 and Epworth Sleep Score (ESS) >10]were offered APAP therapy and monitored

prospectively for 3 months. Their APAP data was downloaded at 2 weeks and 3 months.Data was analysed using Spearman's test and multiple regression.
Results: APAP therapy was initiated in 26 patients (22 men) with a mean (SD) age of 51 (11.7) years. Mean AHI was 44.5 (25.5) and mean ESS was 12 (4.7). Mean compliance at 3 months and 2 weeks was 307 (130) and 330 (96) minutes respectively. Median (range) number of consultations over 3 months was 2 (1-9). Compliance at 2 weeks was significantly correlated to compliance at 3 months ($p<0.001$). Compliance at 3 months was also significantly correlated ($p<0.002$) to the number of consultations with sleep physiologists during this period (telephone and in person).
Other factors such as age, sex BMI, initial AHI and mean APAP did not influence compliance on multiple regression.
Conclusions: Mean short and medium term compliance is very good in our cohort. Compliance at 2 weeks predicts 3 month compliance which is in keeping with other studies.
Compliance was also found to be related to intensity of technical support suggesting that careful follow up will improve compliance.

P3926

WITHDRAWN

P3927
Validation of the efficacy of an oral appliance for the treatment of obstructive sleep apnea in Brazil
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Introduction: Various studies in sleep disorders and the physiopathology of OSA has demonstrated the important role that dentistry could play in improving the lifespan of individuals with OSA.
Objective: To validate, in Brazil, the use of an oral appliance (OA) to treat OSA and primary snoring.
Methods: A retrospective study was carried out on 69 patients presented all OSA degrees or primary snoring, who were fitted to PMPositioner between 2000 and 2010. The diagnosis and degree of severity were established by a polysomnogram (PSG) prior treatment and the efficacy of OA therapy verified by another PSG after a minimum of 6 month of OA usage. Sleepiness was evaluated by Epworth Sleepiness Scale (EES) questionnaire prior to treatment and at the follow up.
Results: Patients were divided in two groups, snoring group (SG) with 7 patients and OSA group with 62 patients. Snoring patients showed no statistical results for PSG variables. AHI $\leq$5 was found in 25 (40%) patients, AHI $\leq$10 was found in 52 (84%) patients, and AHI < 15 was found in 60 (3.2%) patients. Among mild patients, the mean AHI reduced from 12,2±2.0 to 3.3±2.6 $p<0.0001$, among moderate (33) patients, the mean AHI reduced from 21.0±3.5 to 4.6±3.8 and among severe (12) patients, the mean AHI reduced to 44.8±13.5 to 10.0 to 4.3. The mean minimum oxyhemoglobin saturation (SaO2 nadir) for the entire OSA group, increased from 81.1±8.2 to 86.8±7.7 ($p<0.001$). The ESS values reduced significantly from 13,5±5,6 to 8,4±3,5 ($p<0.5$).
Conclusion: We can support the efficacy of adjustable oral appliance in the OSA therapy in Brazilian patients. Various physiologic variables have improved.

P3928
Concordance between the pediatric sleep questionnaire (PSQ) and polysomnography (PSG) in children with probable sleep apnea hypopnea syndrome (SAHS)
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Sleep questionnaires have been validated as useful instruments for patient screening and as a complement for clinical evaluation when a sleep-related breathing disorder (SRBD) is suspected. The PSQ has two versions, an abbreviated form that has been validated for the detection of SRBD, and a complete version for a global valuation of sleep disorders. A cut line was set at 33% of the item scale for the screening determination, with a sensibility and specificity of 0.85 and 0.87, respectively.
Material and methods: 62 patients in pediatric age were gathered consecutively, 53% were male with a mean age of 5.15 years old (± 3.05) to whom a conventional polysomnography (PSG) was performed because of a probable diagnosis of SAHS. The 24 items of the PSQ (validated Spanish version for SRBD) were completed at the Pediatric Outpatient Clinic. Data was compared with the following variables obtained with the PSG recording: apnea-hypopnea index (AHI), oxygen desaturation index (ODI), mean oxygen saturation, minimal oxygen saturation and the time of sleep with an SpO_2 lower than 90% (CT 90).
Results: A correlation did not exist between data determinations of the PSQ with the variables obtained by the PSG (AHI, CT90, ODI, mean SpO_2, min SpO_2) (Adjusted R square 0.06), neither with sex nor age. Although, a good correlation index was obtained between the PSG parameters among themselves (R: 0.60-0.9, p: 0.001).
Conclusions:
- In our experience, the PSQ scores do not correlate with the parameters obtained by PSG.
- In our population sample, the result of the PSQ is not useful for screening patients when a sleep apnea syndrome is suspected in the pediatric age.

P3929
Effects of vertical opening on upper airway dimensions during drug-induced sleep endoscopy in patients with obstructive sleep apnea
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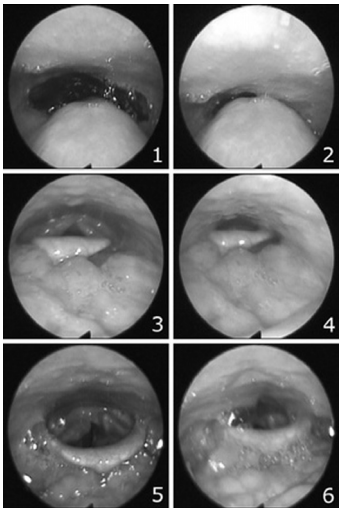
Introduction: Drug-induced sleep endoscopy (DISE) is performed in patients with obstructive sleep apnea (OSA) to locate the level(s) of upper airway (UA) collapse. The procedure is often completed with a chin-lift maneuver. In this study, additionally the effects of vertical opening (VO) on UA collapsibility were video-endoscopically assessed and categorized as adverse (increased collapsibility of UA), indifferent (persistent UA collapse) or positive (no residual collapse).
Results: 40 patients [80% male; age 48±9 y; apnea/hypopnea index 16±12/h; body mass index 26±3 kg/m^2] were included: 32 patients (80%) showed an adverse effect of VO (figure 1; 1-3-5: no vertical opening, 2-4-6: vertical opening), 1 patient (2,5%) a positive effect and 7 patients (17,5%) an indifferent effect.
Discussion: In the literature, the effect of VO on UA collapse is unclear and



the therapeutic impact of VO is not determined. The results of the present study indicate that the effect of VO on the degree of UA collapse as assessed during DISE tends to be adverse, causing collapse in the majority of patients.

P3930

The effects of breathing manoeuvres on the trigeminocardiac reflex reversal of artificially induced supraventricular tachyarrhythmias into the sinus rhythm

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Trigeminocardiac reflexes (TCR) elicited from the intranasal, facial orbital, perinasal or forehead regions are known by a spectrum of respiratory and circulatory vegetative effects which are dominated by strong vagal reflex bradycardia that can be effectively used in the reversal of certain supraventricular tachyarrhythmias (SVTs). The present aim was to examine the effects of inspiratory (IA) and expiratory apneas (EA) (20-25s breath holding on TLC or FRC levels, respectively) and Valsalva manoeuvre (VM, 20s occl. pressure 35 mmHg) on the mechanism of reversal from SVTs by facial cold TCR (cold gel, 10°C for 60 s). AVNRT (15) and AVRT (2) (183±15 c min^{-1}; M±SD) were induced by atrial electrical impulses (2-4mA, 1ms duration; 600 ms period) and/or by isoprenalin (1-5μg/min, i.v.) in 17 patients (18-62 y) while recording icECG, heart rate (HR) and blood pressure (BP). Data showed that TCR+EA and TCR+IA increased both bradycardic (26±3%, vs. 14±4%) as well as pressor effect (13±4% vs. 10±4%) of TCR. Moreover, TCR+IA and TCR+VM increased both the speed and success rate of SVTs reversal (by 11-15%, 45±2% vs. 33%). When applied alone IA, EA or VM decreased HR in SVTs (11,2±3,1%, n=19; 8,6±2,1%, n=9; 16,2±3,1 n=19, M±SD) and rised BP (6-19%). Occassionally, EA (18%) and IA (21%) reversed SVTs into the normal rhythm similar to TCR (27-45%) and VM (26%). The role of intrathoracic pressure changes and other reflex mechanisms underlying SVTs reversal by apnoeic manoeuvres and TCR are discussed.

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P3931

Is obstructive sleep apnea syndrome a risk factor for pulmonary thromboemboli?

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There is no study demonstrating the relationship between OSAS and venous thromboemboli (VTE). The aim is to evaluate OSAS in patients with pulmonary embolism (PE) and OSAS as a risk factor for PE. In the department of chest diseases of Düzce University Hospital, 50 patients with PE were evaluated for the frequency of OSAS, prospectively. Polysomnographic was performed to clinically stable 30 patients agreed to participate in the study. Apnea-hypopnea index (AHI) more than 5 was defined as OSAS. 30 patients (14 women, 16 men, 25-85 age) were included in study. There were 24 patients with non-massive PE (%80), 3 patients with submassive PE (%10), 2 patients chronic PE (%6,7) and 1 patient with massive PE (%3,3), respectively.%56,7 of the patients (17/30) OSAS were detected. The percent of patients with moderate and severe OSAS (AHI >15) was%26,7 (8/30). The patients with no known major risk factors for PE had significantly high rates OSAS compared to those with having major risk factors (respectively,%70; 14/20,%30 3/10 and p:0,045) The mean age of the group with major risk factor for VTE was found low. (66-13 and 52 -15, p: 0,015) There was no significantly difference for gender, weight and body mass index between the groups, who have major risk factors for VTE and who have no major risk factor for VTE.

The rate of OSAS in patients with PE was much higher than that of community. Moreover, the clinical significance of moderate and severe OSAS patients in the community for at least 5 times higher. The group with idiopathic thromboembolism without a risk factor has OSAS in higher rates when compared with the group with risk factors.