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398. Clinical predictors of OSA, adherence to CPAP and psychology

P3824
Plasma levels of TNF in obstructive sleep apnea syndrome (OSA) before and after surgical intervention
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Background: Prior studies have shown that biomarkers of inflammation,including TNF-alpha, are raised in patients with sleep apnea. TNF-α,is one of important risk factors for atherosclerosis, stroke,and Cardiovascular disease in OSA patients.
Aim of the study: To determine whether TNF-α blood levels is elevated in OSA syndrome and whether they are reversible after surgical intervention.
Methods: Among the patients who had visited the ENT clinic for evaluation of sleep problems, 70 subjects were selected. Polysomnography (PSG) and morning venous blood serum for levels of TNF-α were performed in all the subjects and 35 patients were diagnosed as having OSAS.All patients with OSA had surgical intervention according to individual cases. Laser assisted uvulopalatoplasty (LAUP), extended LAUP(LAUP and laser assisted tonsillar ablation), or laser assisted uvuloplasty were done using a CO_2 laser. Sleep apnea monitoring, clinical evaluation and TNF-α level were then compared before and 3 months after intervention.
Results: We compared thirty five patients with OSA(21 males and 14 females), mean age(46.6$\pm$12.4),with 35 control subjects(11males and 24 females),mean age (34.2$\pm$9.6).The mean (SD) plasma level of TNF-alpha was significantly higher in patients with OSAS than in control group {5.77$\pm$4.04pg vs. 2.24$\pm$1.5pg (P=0.039)} respectively, and TNF-alpha level significantly decreased to {(3.22$\pm$3.4pg) (P = 0.001)} after treatment.Also TNF-alpha levels showed a statistically significant positive correlation with the AHI before treatment, and with neck circumference after treatment.

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Conclusion: Our results suggest that TNF may be prognostic factor for comparing patients with OSAS before and after treatment.

P3825
Prescription, subjective and objective compliances in patients with obstructive sleep apnea syndrome using positive airway pressure

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Gold treatment for obstructive sleep apnea syndrome(OSAS) is continuous positive airway pressure(CPAP).We aimed to assess prospectively prescription,subjective and objective compliances in OSAS patients recommended PAP treatment,factors effecting compliance.648 patients (69.6% men,30.4%women)recommended to use PAP in January 2005-June 2011,were included.Patients using PAP were questioned for adverse effects and assessed with ESS(Epworth Sleepiness Scale)at follow-ups.Prescription,objective and subjective compliances were assessed.Relationship between compliance and demographic data,PSG(polysomnography) findings,ESS scores,adverse effects were analyzed.The mean age was 51.29±9.97 and mean BMI(body mass index) was 33.52±6.56.In the first night PSG;mean AHI(apnea-hypopnea index) was 54.16±26.41 and AI(apnea index)was 31.46±26.95.248(38.3%)cases attended follow-ups,246 (37.9%) were followed by phone visits and 154(23.8%)couldn't be reached.Patients usingPAP for at least 4 hours per night for at least 70% of the days monitored were regarded as compliant and who didn't meet this criteria were considered as noncompliant.In whole population 63.9%obtained PAP machine(prescription).In 248 cases attending follow-ups,subjective compliance was 85.1%;objective compliance was 64.5%.Higher ODI(oxygen desaturation index) and lower SpO2(oxygen saturation) observed in first night PSG were found to positively affect prescription (p<0.05).Improvement in ESS score and satisfactory sleep were significantly correlated with objective compliance(p<0.05).Chest discomfort,difficulty falling asleep and sleep disturbances were significantly higher in noncompliant group (p<0.05).

P3826
Association between obstructive sleep apnea (OSA) and depression and the effect of continuous positive airway pressure (CPAP) treatment

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Background: Obstructive sleep apnea (OSA) is a relatively common disorder which has a negative impact on the psychological well-being of affected individuals.
Objective: To assess the association between OSA and depression as well as the effect of treatment with continuous positive airway pressure (CPAP).
Methods: A total of 37 newly diagnosed individuals with OSA underwent an overnight polysomnography and were assessed using the Epworth Sleepiness Scale (ESS), the Hamilton Depression Rating Scale (HDRS), and the Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Patients were assessed before and after 2 months of CPAP use.
Results: Of the 37 patients included in the study, 21 (56.7%) had clinically relevant depression as indicated by a score 0.10 on the HDRS and eleven patients (29.7%) met the diagnostic criteria for a major depressive episode using the Structured Clinical Interview. Scores on the HDRS were correlated with the Apnea Hypoxia Index, ESS scores, and oxygen saturation. Patients showed a significant reduction in depressive symptoms and improvement in ESS scores after CPAP treatment.
Conclusion: Patients with OSA should be screened carefully for depressive disorders. CPAP should be tried first before starting other treatment modalities for depression.

P3827
The psychological burden of OSAS patients is not correlated with apnea-hypopnea index

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Introduction: Obstructive sleep apnea syndrome (OSAS) is characterized by repeated episodes of upper airway obstruction during sleep, which leads to the presence of excessive daytime sleepiness. Regarding the psychological comorbidity in patients diagnosed with OSAS, previous studies focused mainly on depressive and, secondarily, to anxiety symptoms.
Aims and objectives: To record the prevalence of anxiety and depressive symptoms and of alexithymic characteristics in a sample of OSAS patients and to investigate their relation to respiratory parameter (Apnea - Hypopnea Index, AHI) of polysomnography.
Methods: The study was conducted in a certified sleep laboratory. 35 randomly selected patients were examined for anxiety, depression and alexithymia using the Spielberger Trait Anxiety Inventory (STAI), the Beck Depression Inventory (BDI) and the Toronto Alexithymia Scale (TAS-20), respectively.
Results: A high prevalence of anxiety (41.4%) and depressive symptoms (55.2%) and of alexithymic characteristics (41.4%) was observed in OSAS patients. Although the control group showed a higher prevalence of anxiety (66.7%) and depressive (83.3%) symptoms, there were no differences between the two groups (t-test p> 0.05). With regard to severity, no differences were observed between subgroups (mild, moderate and severe OSAS, ANOVA p> 0.05). Women showed higher scores in BDI and STAI compared to men (t-test p <0.05). Finally, no correlation was observed between psychometric scores and AHI (Pearson correlation p> 0.05).
Conclusions: This study supports the presence of a high degree of psychological burden on patients diagnosed with OSAS, regardless of the severity, as determined by the AHI.

P3828
Continuous positive airway pressure in patients with obstructive sleep apnea: Independent predictors of adherence

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Background: Although continuous positive airway pressure (CPAP) is an effective treatment for obstructive sleep apnea (OSA), long-term adherence is challenging. In order to increase the rate of adherent patients it is necessary to determine independent adherence predictors.
Methods: In a retrospective data analysis we studied 4263 German patients (age = 58.4±11.2 years; 82.4% male) treated with *the CPAP device S8 (ResMed, Sydney, Australia)*. We analysed AHI, mean mask pressure, mean leakage, hours of use per night and efficiency (days of use/total days). Data of the last 156.7±25.0 treatment days (range 30-180 days) were collected. Logistic regression was used for determining independent predictors of CPAP adherence.
Results: Mean therapy duration was 3.5±3.6 years. Independent predictors for poor CPAP adherence (<3h/night) were female gender, leakage and therapy duration: odds ratio (OR) for female gender was 1.63, OR for leakage increment per 0.1l/s was 1.13, and OR for therapy duration decrement (starting from 15 years) per 1 year was 1.15. Furthermore, age, therapy duration, mask pressure and leakage were independent predictors for excellent CPAP adherence (>7h/night): OR for 5-year increment of age was 1.06, OR for therapy duration increment per 1 year was 1.10, OR for mask pressure increment per 1 cmH2O was 1.08, and OR for leakage increment per 0.1l/s was 0.86.
Conclusion: Independent predictors for poor CPAP adherence (<3h/night) were female gender, short-term therapy and higher leakage, whereas independent predictors for excellent adherence (>7h/night) were higher age, long-term therapy, increased mask pressure and lower leakage.

P3829
The relationship between obstructive sleep apnea syndrome and two common urological disorders

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Erectile dysfunction (ED) and Lower Urinary Tract Symptoms (LUTS) associated with benign prostatic hyperplasia (BPH) usually occur in older men. The aim was to investigate the relationship between Obstructive Sleep Apnea Syndrome (OSAS) and two urological common disorders.
Between January 2007 and April 2010, the men over the age of 50 admitted to the outpatient department of pulmonary diseases with suspected OSAS were selected. All patients had polysomniography analysis. A total of 29 patients having moderate and severe OSAS with apnea-hypopnea index (AHI)=15-30 (11 patients) and AHI>30 (18 patients), respectively were included in the first group.21 patients with AHI<5 constituted the control group. Voiding symptoms were evaluated by using International Prostate Symptom Score (IPSS) and uroflowmetry. ED was investigated by administering International Index of Erectile Function (IIEF).
Both groups were comparable with regard to age, PSA, prostate volume, and prostate size by digital rectal examination, IPSS values and uroflovmetry results. On the other hand, nocturia and IIEF results were remarkably different between two groups. The average number of nocturia was 1.47, and the mean score of IIEF was 15.48 in patients with OSAS. Those were 0.88 and 19.90 in the control group, respectively (p <0.05).
In this study, IPSS and uroflovmetry values showed no difference between patients with and without OSAS. On the other hand, nocturia and IIEF results were both remarkably different in OSAS patients. As a result, OSAS was shown to be associated with nocturia and ED. Therefore, the patients with complaint of either nocturia or ED should be investigated for OSAS.

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P3830

Allergic rhinitis' impact on obstructive sleep apnoea (OSA)

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Introduction: According to ARIA (Allergic Rhinitis and its Impact on Asthma), OSA has been associated with nasal disturbances, however the relationship between Immunoglobulin E-mediated Allergic Rhinitis (IgEAR) and OSA is not fully determined.
Objectives: To analyse the impact of IgEAR on OSA.
Methods: Patients (pts) referred to a sleep clinic performed overnight polysomnography during the month of August. Two indicators of rhinitis were considered for diagnosis: having a previous rhinitis diagnosis or having two or more nasal symptoms in the last 12 months. If present, Skin Prick Tests (SPT) to common aeroallergens were performed. IgEAR was considered when nasal symptoms were accompanied by positive SPT, whereas Non-IgE mediated Rhinitis (NIgER) occurred with negative SPT.
Results: From 68 consecutive pts, OSA was diagnosed in 52 (77%), 75% male; mean age: 58 years old. 67% of OSA pts had rhinitis. The frequency of IgEAR and NIgER among OSA pts was 38% and 29%, respectively; 21% had a IgEAR diagnosis and 8% had taken drugs for this disease. Most pts had persistent (60%) and moderate-severe (75%) IgEAR symptoms. Most frequent nasal symptoms were sneezing and nasal pruritus (90%). Pts with IgEAR had significantly more severe OSA than pts with NIgER (p=0.03), with no differences in age, gender, obesity or sleep symptoms between groups. Those with more severe IgEAR symptoms had higher AHI (p=0.04).
Conclusions: A high frequency of IgEAR was found among OSA pts (38%), which was underdiagnosed and undertreated. These pts had more severe OSA than patients with NIgER; their nasal symptoms severity was associated with higher AHI. The evaluation of IgEAR in OSA pts may contribute to improve these patients' clinical approach.

P3831

Sleep behavior and disturbance in high school students; a cross-sectional study in Jeddah, Saudi Arabia

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Introduction: Sleep disturbance and insufficient sleep pose a serious risk for adolescents as they have been linked to a higher incidence of road traffic accidents, psychological distress and decreased learning capacity.
Aims: To investigate the sleep-wake patterns and prevalence of sleep disturbance among high school students and their relationship with school performance and psychological stress.
Methods: A cross sectional study was carried out from January to May 2011 on a random sample of high school students. Participants completed a questionnaire which included the Pittsburgh Sleep Quality Index (PSQI), Perceived Stress Scale (PSS) and Epworth Sleepiness Scale (ESS).
Results: 947 students were recruited, of whom 55.6% were female with a mean age of (16.9±1.17). Marked delay of mean weekend sleep (04:58) and rise (12:04) time was identified. The total hours of sleep on school nights was 6.97±2.72, with an average estimated sleep latency of 25 minutes. Ten percent of students reported using medications within the last month to help them fall asleep. Disturbed sleep (PSQI score >5) was found in 56% of the study participants. Excessive daytime sleepiness (EDS) defined as ESS score of >10 was found in around one third (37%) of students. Fifty-five percent were identified as psychologically distressed based on PSS. No significant difference was identified in PSQI global score between stressed and not stressed groups (p=0.590), or between different GPAs (p=0.129).
Conclusions: More than half of the students had sleep disturbance and over a third had abnormal daytime sleepiness. Further studies to investigate the reasons for such sleep problems and intervention programs are needed.

P3832

Flexible positive airway pressure improves treatment adherence compared with auto-adjusting PAP

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Background: There are no clinical data comparing adherence and quality of life between auto-adjusting positive airway pressure (APAP) and two different flex PAP devices (A-Flex, C-Flex) in patients with obstructive sleep apnea (OSA).
Methods: Ninety-three patients with OSA who were newly diagnosed were randomly assigned to receive 3 months of APAP (n=31), APAP with C-Flex (n=31), or APAP with A-Flex (n=31). Objective adherence was determined after 3 months of CPAP treatment, and the Epworth Sleepiness Scale (ESS), Pittsburgh Sleep Quality Index (PSQI), and Calgary Sleep Apnea Quality of Life Index (SAQLI) were examined at baseline and after 3 months. After 3 months, patients in the APAP with A-Flex group and those in the APAP with C-Flex group were crossed over and those in the APAP group were switched to A-Flex for 3 additional months.
Results: The groups were similar demographically. Treatment adherence during the first 3 months was significantly greater in the APAP with C-Flex group (APAP with C-Flex: 5.19±1.84 h/night vs. APAP: 3.96±1.66 h/night vs. APAP with A-Flex: 4.27±2.12 h/night, p = 0.04). There was a significant improvement in 2 of 4 of the SAQLI domain scores and in the ESS and PSQI in the APAP with C-Flex group. Adherence significantly improved among the poor compliers (<4 h/night of use) in the APAP group after change to APAP with A-Flex (p=0.01).
Conclusions: APAP with C-Flex was a suitable CPAP modality in three type CPAP modalities.
Clinical Trial Registration–URL: http://www.clinicaltrials.gov. Unique identifier: NCT00873977.

P3833

Infectious complications associated with the use of CPAP in patients with sleep apnea-hipopnea sindrome

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Introduction: CPAP systems can be contaminated by microbes, increasing the risk of respiratory infections. Humidifiers can add a higher risk. Our study evaluates upper respiratory tract colonization and respiratory diseases related to CPAP with or without humidifier.
Methology: A prospective study was designed. 100 CPAP-users were randomized: Group A (CPAP without humidifier): 50 patients (41 men, 9 women) between 28 and 87 years (average, 55). GROUP B (CPAP with humidifier): 50 patients (43 men, 7 women) between 41 and 98 years (average, 62). Patients were instructed on good hygienic practices in maintaining their systems. They were asked about respiratory infection symptoms. Swabs were taken from pharyngeal exudates in all patient, and from masks and tubes in Group B.
Results: 16 Pharyngeal exudates cultures were positive in Group A and 5 in Group B (32% versus 5%). Results: *Streptococcus group G:* 6 patients in Group A; *Streptococcus pyogenes group A:* 6 in Group A and 1 in Group B; *Streptococcus beta-hemolytic group C:* 3 in Group A, 2 in Group B; *Staphylococcus aureus:* 1 in Group A; *Streptococcus group C:* 2 in Group B. Respiratory infection symptoms: 3 patients in Group A, 5 in Group B (6% versus 10%). Swabs from masks and tubes in Group B: 31 polymicrobial flora, 2 multiple fungal flora, 3 *Turolopsis candida*, 1 *Aeromona hidrophila*, 1 *Rodotora rubra*, 1 *Serratia marcensis* and 1 *Pseudomona aeruginosa*.
Conclusions: Upper respiratory airways colonisation has been lower in the humidifier group, even though CPAP systems contamination has been common. Respiratory infection symptoms were low in both groups. Humidifiers have not significantly increased infections.

P3834

Snoring at sitting position is a good predictor of sleep apnea in Chinese patients

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Background: Snoring is a common symptom among adults population, and it is the most common complaint in patient with obstructive sleep apnea(OSA) syndrome. Patients who have snoring in sitting position during nap or sleep should have narrower upper airway. The aim of this study was to evaluate if the snoring in sitting position is a predictor of OSA patients.
Method: We prospective enrolled 51 male and 23 female patients. All the participants received questionnaires as well as a standard polysomnography thereafter.
Result: Patients who have self-reported snoring of sitting position (with tilt position for over than 45°, SS+ group) have higher body mass index as well as higher circumflex of neck and waist, higher level of Epworth sleepiness scale.

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During polysomnographic study, SS group have more percentage of S1 and less percentage of S2 sleep. Besides, SS group have more severity of apnea-hypopnea index (AHI), as well as higher AHI during REM or non-REM sleep. More oxygen desaturation index and arousal index were also noted. The sensitive and specificity of the SS + group for OSA (defined as AHI ≥5) were 0.77 and 0.52, with positive predictive value and negative predictive value were 0.8 and 0.48. The likelihood ratio was 1.6. On the other hands, the sensitive and specificity of the SS + group for moderate to severe OSA (defined as AHI ≥15) were 0.78 and 0.42.

Conclusion: In the present study, the symptoms of self-reported snoring of sitting position can be a useful predictor of Chinese OSA patients.

P3835
5-years APAP adherence in OSA patients

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Introduction: Although continuous positive airway pressure (CPAP) is effective in the treatment of obstructive sleep apnoea (OSA), inadequate adherence remains a major cause of treatment failure.

Objective: To determine long term adherence to auto adjusting-CPAP (APAP) and its influencing factors. To evaluate initial compliance and its relation to long-term adherence.

Methods: 83 male patients with moderate to severe OSA were enrolled. After beginning, APAP patients' compliance (% of days usage and median hours per night) was recorded during medical appointments, after 12 days, 6 months and then annually for at least 5 years.

Results: Patients mean age was 53.8 ± 10.8 years, mean apnoea-hypopnoea index of 52.5 ± 20.1/h and mean Epworth sleepiness scale of 12.41 ± 5.5.

Mean follow-up time was of 61.9 ± 23.1 months, 63 patients (75,9%) are still using APAP (73.43 ± 7.1 months) having a mean percentage of use of 92.6 ± 7.18 for $06:55\pm01:35$ per day. Twenty patients (24.1%) abandoned treatment after 25.4 ± 17.5 months, on average.

Patients who abandoned treatment during the follow-up period had lower initial compliance. Percentage of use at 12th day and 6th month was 81.7 ± 23 and 65.8 ± 28.5 for non-adherent patients and 96.6 ± 7.4 and 94.3 ± 9.1 for adherents (p=0.01 and p=0.001), mean hours per night were $04:41\pm01:55$ and $04:07\pm01:57$ vs. $06:18\pm01:28$ and $06:18\pm01:12$ (p=0.001 and p=0.001), respectively.

Non-adherent patients were younger (p=0.01). No other differences including employment state, marital status or disease severity and symptoms were found between the groups.

Conclusions: Patients who maintain long-term treatment have very good compliance. Non-adherent patients have significantly lower initial compliance than long term-adherents.

P3836
Obstructive sleep apnea among diabetics in southeastern Nigeria

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Background: Diabetic patients are prone to obstructive sleep apnea (OSAS). OSAS has also been shown to be associated with increased cardiovascular morbidity and mortality. There is a paucity of data on this condition among diabetics in Nigeria. This study was carried out to determine the risk of OSAS among diabetics in Nigeria.

Methods: Diabetics attending the medical outpatient clinic of a tertiary hospital in South Eastern Nigeria were recruited into this survey. A modified version of the Berlin Questionnaire was used to determine the risk for OSAS and also obtain demographic data. Anthropometric and spirometric measurements were also obtained from all subjects. The survey was conducted over a 4 months.

Results: 114 diabetics were randomly recruited for this survey, 54 (47.4%) female sand 60 (52.6%) males. 66 (57.9%) of the subjects were hypertensive. The average age of the subjects was 55.5 years and the average duration of diabetes was 7.5 years. 63(55.3%) of the subjects were found to have a high risk for OSAS. there was no gender difference in the risk for OSAS. A high risk for OSAS was associated with increased BMI, increased neck size, hypertension, alcohol use and reduced PEF. The factors that significantly predicted a high risk for OSAS were a history of hypertension (OR 55), alcohol use (OR 9), increasing BMI (OR 2) and poor BP control (OR 2).

Conclusion: OSAS is often not diagnosed among patients with diabetes and the strong association between a previous history of hypertension and OSAS may be the reason for the increased risk of cardiovascular death among diabetics.

P3837
Compliance for NIMV treatment in moderate and severe OSAS patients

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Aim: In the non-invasive mechanic ventilation (NIMV) using in the treatment of obstructive sleep apnea syndrome (OSAS), compliance problem is a frequently seen difficulty. Aim in this study is to analyze the compliance of the OSAS patients to the NIMV treatment, and to search the factors affecting the compliance.

Method: The patients given NIMV treatment in the sleep laboratory of the university hospital due to moderate or severe OSAS between 1 January 2011 and 31 December 2011 were included to our study. Polisomnographic findings of the patients were recorded. A questionnaire about compliance to the NIMV that had been set by our clinic applied to the patients by the phone calls.

Results: 75,4% of the 134 included patients were male. The mean age was $49,9\pm12,3$. Mean BMI, Epworth and RDI of the patients were $32,55\pm5,9$, $10,6\pm6,0$ and $43\pm23,1$. Complication related to the NIMV device use was seen in 37 (27%) of the patients. The most frequently seen complications were dryness of mouth, discomfort due to mask, dryness of throat, irritation of the eyes, nasal congestion, bloating, claustrophobia and headache. Sixteen (11,9%) patients was not using the NIMV device due to device discordance. Six of these patients have severe, and 10 of these patients have moderate OSAS.

Conclusion: Compliance to the NIMV in the OSAS treatment is still an important problem. Patients treated with NIMV should be kept under close observation and should be informed about the risks of the disease if not used the device.

P3838
Evaluation of continuous positive airway pressure compliance in a group of obstructive sleep apnea patients

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Currently, the treatment of choice for OSA is nasal CPAP but the documented efficacy of CPAP may be poor because of decreased compliance.

Objective: Objective is to evaluate the CPAP compliance in a group of OSA patients in the state of Kuwait.

Methods: 60 patients proved to have OSA by polysomnography, (ESS) and (FOSQ) were done for all patients then follow up for 3 months were done and then patients reassessed again.

Results: Only 45 patients (75%) were compliant on CPAP with a mean runtime of 5.23 ± 0.46 hour/night, CPAP significantly improved the AHI from 44.89 ± 10.85 to 5.93 ± 1.68/hour, ESS from 12.88 ± 2.32 to 3.47 ± 1.14 and total FOSQ from 83.78 ± 1.67 to 108.39 ± 1.40(p < 0.01), on using correlation study there was significant correlation between the CPAP runtime and the baseline Body Mass Index (BMI), AHI, ESS but on using stepwise regression analysis the only 2 variables showed significant correlation were the BMI and ESS.

Conclusion: In this group of patients the rate of CPAP compliance was considered good (75%) and the only factors that can predict short term CPAP compliance were the BMI and ESS.

P3839
S100B protein: A useful marker in obstructive sleep apnea syndrome

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Aim: Up to now, there have been a few studies performed on serum S100B protein level in patients with obstructive sleep apnea syndrome (OSAS). We aimed to underline the importance of the serum S100B protein as biochemical marker of cerebral damage in patients with OSAS.

Method: Forty-three newly diagnosed OSAS patients [apnea-hypopnea index (AHI): 37.5 (11.3-137), female/male: 18/25] and 25 subjects with AHI value of below 5 [AHI: 4.4 (0.7-4.8), female/male: 8/17] were included in the study. In both groups serum S100B protein level were tested in serum samples taken after polysomnography. Differences in serum S100B protein levels between the OSAS patient group and control group were examined. In addition, association of S100B protein serum level with age, body mass index, AHI, mean apnea time, lowest SpO2 value, percentage time spent at SpO2< 90% was analyzed in OSAS patient group. In the control and OSAS patient groups difference between the variables was evaluated by parametric independent two samples t test while the relation between the variables and serum S100B protein level in OSAS patient group was evaluated by using Spearman correlation test.

Results: Serum S100B protein level was found to be 133.7 (20.97-230.70) pg/mL in OSAS patient group and 16.1 (10.1-22.9) pg/mL in control group (p=0.000).Serum S100B protein level was not found to be correlated with other variables (p>0.05).

Conclusion: Serum S100B protein level increases in patients with OSAS. This suggests that serum S100B protein may be a useful biochemical marker in determining cerebral damage in patients with OSAS.

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P3840
Impact of an educational intervention to improve adherence to treatment with continuous pressure airway positive

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The treatment of choice for sleep apnea syndrome (SAS) is continuous pressure airway positive (CPAP). One of medical objectives is to improve compliance.
Objectives: To determine the role of an educational intervention on the adherence to CPAP after four months of treatment.
Patients and methods: This study has been undertaken at the Sleep Unit of a Tertiary Hospital. During 5 months all patients who were consecutively diagnosed of SAS and had indication for CPAP were enrolled.
Patients were classified exclusively according to the weekday when polysomnography was performed. The interventional group was composed by subjects who underwent polysomnography from Monday to Thursday. After testing, patients were shown the results of polysomnography on the computer screen. The control group included those patients who underwent polysomnography from Friday to Sunday. In both groups, the nurses explained the process of adaptation to CPAP. The patients were evaluated at the end of the first and fourth month. The treatment compliance at four months was measured by the ratio hours of use per day stored in the memory of the CPAP device.
Results: We included 175 patients; 43 of them were women (25%), mean age = 54±11 years, BMI = 31±4, and score on the Epworth scale = 13±2.4. The interventional group consisted of 101 patients. The average use of CPAP in the interventional group was significantly higher than that of the control group (4,7±2,1 hours vs 3,6±2,5 hours, p=0.005).
Conclusions: A vision of the sleep test by patients and an explanation by a physician is an intervention that significantly improves compliance with CPAP.

P3841
The evaluation of risk of obstructive sleep apnea syndrome in individuals with dysglycaemia

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Introduction: The prevalence of obstructive sleep apnea syndrome (OSAS) is known to be higher in individuals with prediabetes and diabetes mellitus.
Aims and objectives: This study aims to evaluate the risk of OSAS in individuals with dysglycaemia, comparative with those with normal glucose tolerance, in a rural population, and to find out whether those with prediabetes or diabetes have a higher risk of OSAS.
Methods: We conducted a cross-sectional study in a sample of 254 men and women, aged >18 years, from a rural population. Dysglycaemia was evaluated by fasting plasma glucose-FPG and performing an oral glucose tolerance test-OGTT in all individuals without diabetes and by determining glycated haemoglobin-HbA1c. WHO (1999) criteria for diagnosing diabetes and prediabetes and American Diabetes Association recommendations for HbA1c diagnostic values were used. The risk of OSAS was assessed using Berlin Questionnaire.
Results: We found that a statistically higher percentage of those with diabetes and prediabetes, diagnosed by HbA1c (66,7% and 32,8% respectively) and by OGTT (57,1% and 30,3% respectively) had a high risk of OSAS (p=0,001 and p=0,022, respectively) as compared to those with normal glucose tolerance (27,5% and 31,3% respectively). When assessing dysglycaemia by FPG, our results showed no statistically significant differences in what concerns the risk of OSAS between the two categories, normoglycaemia and dysglycaemia (p=0,051).
Conclusions: The evaluation of risk of OSAS should be performed in individuals with prediabetes and diabetes, thus allowing the identification of individuals who should be referred to a sleep center.

P3842
Length of hospitalization for CPAP adaption in OSAS: Effects on compliance

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Introduction: The efficacy of continuous positive airway pressure (CPAP) for the treatment of obstructive sleep apnea syndrome (OSAS) is known, but patient compliance is variable, relating to many factors. CPAP adherence requires a multi-layered approach, using combined technological, behavioral, and adverse-effect interventions.
Aims and objectives: To assess the clinical efficacy of two different management models for CPAP adaptation on adherence to treatment, occurrence of discomfort and skillful management of the problems.

Methods: We retrospectively evaluated 134 consecutive patients with moderate-severe OSAS, average age 57±10, admitted in a rehabilitation institute for CPAP adaptation, between 2003 and 2009. According to the different provisions of the local health organization before and after 2006, we divided patients in two groups on the basis of the mean length of hospitalization (20 days in Group 1, 7 days in Group 2). CPAP use, numbers of dropout, numbers of patients with discomfort, and numbers of unscheduled visits were assessed at 1 year.
Results: Comparisons are summarized in the table. Data are presented as mean±SD.

	No. Pts	BMI	AHI	CPAP use h/night	Dropout	Pts with discomf.	Unsch. visits
Group 1 <2006	63	34±6[†]	48±24	4.7±2.7	9	7 (11%)	11
Group 2 ≥2006	71	32±6	45±21	4.3±2.9	16	27 (38%)[‡]	36[‡]

[†]p<0.05, [‡]p<0.001.

Conclusions: We observed the same adherence to CPAP in terms of mean daily use in the two groups, at one year. However, to obtain the same adherence, the patients adapted in few days had more frequently discomfort, that required a great number of unscheduled visits.

P3843
Obstructive sleep disorders in children with allergic rhinitis

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Background: Allergic rhinitis (AR) is the most prevalent chronic disease in children, associated with impairments in quality of life, sleep disorders, emotional problems, and impairment in activities. AR can induce medical complications, learning problems and sleep-related complaints, such as obstructive sleep apnea syndrome (OSAS). OSAS is characterized by repeated events of partial or complete upper airway obstruction during sleep. The aim of this study was to estimate the prevalence of obstructive sleep apnea in children with seasonal and perennial allergic rhinitis together with predictive factors.
Methods: We studied children (age 5-17 yrs, N=47) with allergic rhinitis that underwent sleep study using complete polysomnography (PSG) according to standardized protocol. All patients underwent detailed medical and family history, physical examination including ENT examination, and an array of diagnostic tests (skin-prick test, total and specific IgE, cytology of the nasal mucosa, complete and differential blood counts) and Children's Sleep Habits Questionnaire.
Results: Results from our study showed that almost half (46%) of the examined children with allergic rhinitis suffer from obstructive sleep apnea (88% had obstructive hypopnea). Obstructive sleep apnea was significantly associated with: perennial allergies (p=0.018) and nasal congestion (p=0.026), showing a significantly higher apnea/hypopnea index (AHI) in the group with perennial allergy (p<0.025).
Conclusion: Results of this study indicate that significant number of children with allergic rhinitis may develop obstructive sleep apnea. Perennial AR is an independent risk factor for OSAS in children probably because nasal congestion is the most prevalent symptom of it.