260. Obstructive sleep apnoea: clinical aspects I

P2263
Investigating for dyslipidemia in those being referred for suspected obstructive sleep apnoea
Sinead Walsh, Faheem Khan, Danielle Divilly, J.J. Gilmartin. Regional Respiratory Centre, Merlin Park Hospital, Galway, Ireland

Introduction: Abnormal lipid metabolism is a major risk factor in the development of coronary artery disease. Dyslipidemia is present in many subjects with Obstructive Sleep Apnoea Syndrome (OSAS) and an independent association between the two has been observed in a number of studies. Patients referred for inpatient polysomnography in our unit are screened by a fasting lipid profile. This study aims to evaluate the rates of dyslipidemia in this population and to compare OSAS and non-OSAS populations.

Methods: A retrospective review of 285 consecutive subjects (78.6% male, 21.4% female) referred for sleep assessment was performed. Laboratory results, polysomnographs and charts were analysed.

Results:

<table>
<thead>
<tr>
<th></th>
<th>OSAS</th>
<th>No OSAS</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>49.2</td>
<td>49.1</td>
<td>0.960</td>
</tr>
<tr>
<td>BMI</td>
<td>37.9</td>
<td>30.8</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>AHI</td>
<td>40.55</td>
<td>3.33</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>5.15</td>
<td>5.17</td>
<td>0.890</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>1.86</td>
<td>1.57</td>
<td>0.090</td>
</tr>
<tr>
<td>LDL cholesterol</td>
<td>3.25</td>
<td>2.99</td>
<td>0.064</td>
</tr>
<tr>
<td>HDL cholesterol</td>
<td>1.03</td>
<td>1.39</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Conclusion: OSA patients have lower HDL cholesterol levels, but no significant difference in total cholesterol, triglycerides or LDL levels. We recommend to continue measuring fasting lipid profiles in this population. A possible confounding factor in our study is BMI.

P2264
Correlation between excessive daytime sleepiness and the risk for obstructive sleep apnea with academic performance among medical students at UP-PGH
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Objective: This study aims to determine if there is any relationship between daytime sleepiness and risks for obstructive sleep apnea (OSA) with students’ academic performance.

Methods: A self-administered validated questionnaire (consisting of Profile, Sleep- ing habits, Berlin Questionnaire, and the Epworth Sleepiness Scale) was distributed to duly enrolled medical students from Level 1 to 6 of the University of the Philippines College of Medicine SY 2009-2010. The general weighted average of every student at the end of the 2nd semester school year 2010 was obtained and correlations were determined.
Results: There were 458 (64.4%) students who participated in the study out of the 711 duly enrolled medical students for academic year 2009-2010. Of the participants, 77.3% had abnormal daytime sleepiness ranging from mild to excessive. There was poor correlation between levels of daytime sleepiness and academic performance (Pearsons correlation coefficient 0.25). There was also poor correlation between risk for obstructive sleep apnea and academic performance gauged by using grade point students (Pearson correlation coefficient 0.86).

Conclusion: The present study shows that there is no significant statistical correlation between excessive daytime sleepiness or risk of obstructive sleep apnea and academic performance of medical students as measured by their general weighted average.

P2265
Mortality in young and old subjects with obstructive sleep apnoea with and without comorbidities
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1Service des Examens de la Fonction Respiratoire et de l'Appareil Cardiovasculaire, Hôpital Européen, Marseille, France; 2Assessorato Sanità Regione Siciliana - Dipartimento di Attività Sanitarie e Ospedaliero-Epidemiologico - Servizio 2 Promozione della Salute, Palermo, Italy

Increasing obstructive sleep apnoea (OSA) severity has been reported to be associated with a progressive increase in mortality excess, particularly among young subjects. It is unclear if in older subjects apnoeas are less harmful than in young subjects, or if comorbidities overcome and obscure the effects of OSA on mortality. Medical records of 1023 subjects studied for suspected OSA between 1991 and 2000 were retrospectively evaluated. During the first months in 2009 their state of survival or possible date of death was enquired. Information about 810 subjects (age 53.4±11.6 years, 629 M) was obtained. In the whole sample, survival was associated to comorbidities and age, but not to AHI or lowest nocturnal SaO2. Among subjects aged <50 (n=315), 87% did not have comorbidities other than hypertension, in subjects ≥50 (n=195) this percentage decreased to 56% (p<0.001). In the subgroup of the younger subjects without comorbidities (n=273), a lowest nocturnal SaO2 value <87.6% was associated to worse survival (96.1% at 10 and 87.6% at 15 years) as compared to values between 70 and 84% (survival respectively 100% and 97%) and values >87.6% at 15 years) (p<0.05). A similar association was not found among older individuals nor among subjects with comorbidities. These data suggest that among subjects ≥50 increasing OSA severity does not worsen mortality even in subjects without comorbidities.

P2266
Relationship between the reduced ventilatory response to CO2 and the impairment of the lung function in myotonic dystrophy patients
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Background and objective: It has already been demonstrated that the ventilatory response to CO2 is decreased in myotonic dystrophy type 1 (MD1) patients. However, the impact of such impairment of central respiration drive associated to respiratory muscle weakness has not been clarified. Therefore, we intended to study the relationship between the reduced ventilatory response to CO2 and the impairment of the lung function in a sample of MD1 patients.

Methods: 37 MD1 patients were prospectively investigated. Evaluation included measurements of the flow/volume curve and lung volumes, measurements of respiratory muscle function, arterial blood gas analysis and ventilatory response to carbon dioxide (steady state method).

Results: On lung function assessment, 12 MD1 patients presented a ventilatory restriction and 10 patients were hypercapnic. Maximum static respiratory pressures were greatly decreased (33.1% ± 15 of predicted values) in all but one patient. Ventilatory response to CO2 was reduced to 0.73 L/min/mmHg ± 0.4. Vital capacity decline was correlated to respiratory muscle weakness (p=0.023) but neither to PCO2 (p=0.274), nor to ventilatory response to CO2 (p=0.197). Respiratory muscle weakness was not correlated to PCO2 (p=0.289) nor to ventilatory response to CO2 (p=0.297).

Conclusion: The reduced response to CO2 in MD1 patients appeared independent of respiratory muscle weakness and of PCO2 suggesting a central cause of CO2 insensitivity. This impairment of the central respiratory command could be involved in central apneas and irregular breathing patterns, already observed in such patients.

P2267
Evaluation of association between OSA and metabolic syndrome, insulin resistance and Hs-CRP
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Background: Obstructive sleep apnoea (OSA) is an important medical problem that shares many cardiovascular risk factors with metabolic syndrome. This study aimed to evaluate the possible association of OSA severity with metabolic syndrome, Insulin resistance and Hs-CRP.

Methods: We evaluated 80 subjects who suspected for OSA (54.92±years). Blood sampling was taken after 12 hours fasting for glucose, insulin, high-density lipoprotein (HDL) cholesterol, triglycerides, high-sensitivity C-reactive protein (Hs-CRP), and then Overnight polysomnography was done. Insulin resistance was assessed by the homeostatic model (HOMA) and metabolic syndrome was evaluated according to The National Cholesterol Education Program’s Adult Treatment Panel III report (ATP III), and subjects categorized by OSA severity. We compared three groups: without OSA, mild OSA and moderate to severe OSA.

Results: 28 subjects hadn’t OSA, 28 and 34 subjects had mild and moderate to severe OSA, respectively. Metabolic score was 3.29±1.21, 3.07±1.27 and 3.59±0.148 in subjects without OSA and mild OSA and moderate to severe OSA, respectively (p=0.13 p=0.02). HOMA index was 56.87±5.84, 106.42±199.68 and 96.23±127.81 (p=0.33 p=0.37) and hs-CRP levels was 1.62±1.8, 2.10±2.24 and 2.36±2.38 mg/dl (p=0.21 p=0.38) order in above three subjects. There was significant association between metabolic score and HOMA index (p=0.01) and also between metabolic score and hs-CRP level (p=0.02)

Conclusion: Although Hs-CRP, insulin resistance and metabolic syndrome increase with OSA severity but there was no significant association between apnea hypopnea index and Hs-CRP, insulin resistance and metabolic syndrome.

P2268
Oxygen desaturation is associated with diabetes mellitus in patients with obstructive sleep apnoea
Mohammad Al-Abri, Hussain Al-Lawati, Yousef Al-Alawi, Abdullah Al-Manawi.

Background: Obstructive sleep apnoea (OSA) is an important medical problem that shares many cardiovascular risk factors with metabolic syndrome. Therefore the etiological relationship between OSA and diabetes mellitus is unclear if in older subjects apnoeas are less harmful than in young subjects, or if comorbidities overcome and obscure the effects of OSA on mortality. Clinical and epidemiological studies showed that the association of OSA and diabetes mellitus is not strong. However, an association between diabetes and oxygen desaturation index (median for diabetic 25 V s 9.6 for non diabetic p=0.02) and it becomes more significant with severe desaturation (SaO2 <90%) (median for diabetic 50 V s 4 for non diabetic p=0.02). There was weak association between body mass index and DM (p=0.05) in this population sample. Nevertheless, there was no association between daytime sleepiness (ESS) and the diabetes (p=0.05).

Conclusion: The study showed that Obstructive sleep apnoea is associated with diabetes mellitus. OSA patients with more severe Oxygen desaturation are at greater risk of developing diabetes.

P2269
Systemic inflammation and vascular dysfunction in patients with OSA
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Introduction: Our hypothesis is that systemic inflammation and endothelial vascular dysfunction in OSA patients is associated. Therefore our primary objective was to be able to establish the etiological association between them.

Materials and methods: Observational case control study in OSA patients and healthy individuals. All of them were tested for serum and urinary markers (mann-Whitney test) comparison with median and quartiles were the following: CRP (0.5 controls 0.3, p=0.15), leucocytes (OSA 7500, controls 6000, p=0.18), D-dimer (OSA 339, controls 252, p=0.18), fibrinogen (OSA 401, controls 318, p=0.0007) and microaluminuria (OSA 7.6, controls 4.7, p=0.12).

No statistically significant differences in arterial stiffness (IA, OSA 19, controls 13,5 p= 0,2) neither in vascular endothelial dysfunction (IRH, OSA 1,50 control 1,72 p= 0,2) were found, although its value was lower than what is considered significant for endothelial dysfunction (<1,67).

Conclusions: An association between OSA and cardiovascular risk can be established as measured by the inflammatory marker fibrinogen, and by taking into consideration the data that suggest that endothelial dysfunction may be present.
P2270
The changes of serum adipocytokines levels in patients with OSAHS
Yong Lin, Ting Xu. Respiratory Department, Zhongda Hospital of Southeast University, Nanjing, Jiangsu Province, China

Background: Obstructive sleep apnea hypopnea is associated with obesity. Adipocytokines which were secretioned by fatty tissue can influence energy metabolism all over the body and development of obesity. Apelin, NPY and A-FABP were adipocytokines discovered for about few years. They may participate in the generation and development of OSAHS, especially obesity combined OSAHS.

Objective: To investigate the relationship between adipocytokines (Apelin, NPY and A-FABP) and obstructive sleep apnea-hypopnea syndrome (OSAHS).

Methods: Patients underwent polysomnography were recruited and divided into OSAHS group and non-OSAHS group. Each group was divided into obesity, hypergravity and normal body weight arms according BMI. OSAHS group was divided into mild, moderate and severe arms. Plasma Apelin, NPY, A-FABP ng/ml levels of all arms were tested and compared.

Results: Plasma adipocytokines levels were positively correlated with BMI, while negatively correlated with LSao2 and MSao2 in OSAHS group.

Conclusions: Obesity can cause the increase of plasma Apelin, NPY and A-FABP levels. These three adipocytokines were positively correlated with the severity degree of OSAHS.

P2271
Deregulation of carbohydrate metabolism in patients with sleep apnea
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Material and methods: The study included 103 new patients with the following characteristics: BMI 20-35 kg/m2, neck circumference 42-7 cm, Epworth 11±10, AH1 33±21 h, DI 34±28 h, mean SpO2 91±9%, minimum SpO2 76±14%, CT 90±22±10%, Diabetic patients were excluded. Patients underwent blood tests and sleep studies.

Results: When comparing a group of patients with OSAHS to a control group, there were significant differences in NGSP HbA1c and IFCC HbA1c (p<0.037).

There was significant linear correlation between glucose and age (r=0.21). NGSP HbA1c was positively correlated with BMI (r=0.43), minimum SpO2 (r=-0.39), age (r=0.38). The same for IFCC HbA1c. Insulin with BMI (r=0.39), QUICKI index with AH1 (r=-0.28), with ODI (r=0.50), with BMI (r=-0.47) and with neck circumference (r=-0.49). The HOMA-IR index correlated with BMI (r=0.49).

To find possible determinants of NGSP HbA1c (%), the following multiple linear regression model was used: NGSP HbA1c (%)=4.818±0.011*Age+0.005*ODI (r 2=0.23, p<0.003).

Conclusions: 1) Patients with OSAS show higher levels of NGSP HbA1c and IFCC HbA1c.

2) There were significant correlations between some hydrocarbon metabolism parameters/indices and clinical sleep parameters.

3) Using the regression model, the NGSP HbA1c variability is explained in 23.3% of cases by age and oxygen desaturation index.

P2272
The relationship between obstructive sleep apnea hypopnea syndrome and insulin resistance, vascular complications in patients with type 2 diabetes mellitus
Guoxian Ma, Xiheng Guo. Respiratory and Critical Care Medicine, Beijing Institute of Respiratory Medicine, Beijing Chaoyang Hospital-Affiliate of Capital Medical University, Beijing, China

Background: The episodes of hypoxia/reoxygenation caused by OSAHS is associated with many metabolic disorders. Oxidative stress is a characteristic of type 2 diabetes mellitus (T2DM).

Methods: The subjects were poorly controlled type 2 diabetes mellitus from August 2009 to January 2010 in the Endocrine ward of Beijing Chaoyang Hospital. We recorded the clinical information of all subjects. Fasting venous blood samples was obtained after an overnight fast. Polysomnography (PSG) monitoring, oral glucose tolerance test (OGTT), and body plethysmography. This procedure was repeated for all rats before and after unilateral section of hypoglossal nerve (XII). Parameters studied were swallowing frequency and occurrence during inspiration or expiration, tidal volume (VT), total time of ventilatory cycle (TT) and respiratory drive (VT/TT).

Results: There were significantly higher VD levels (41,6nmol/l, p=0.02) than pts without OSA (26,3 nmol/l). There were significant differences in NGSP HbA1c and IFCC HbA1c (p<0.037).

There was significant linear correlation between glucose and age (r=0.21). NGSP HbA1c was positively correlated with BMI (r=0.43), minimum SpO2 (r=-0.39), age (r=0.38). The same for IFCC HbA1c. Insulin with BMI (r=0.39), QUICKI index with AH1 (r=-0.28), with ODI (r=0.50), with BMI (r=-0.47) and with neck circumference (r=-0.49). The HOMA-IR index correlated with BMI (r=0.49).

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Conclusions: 1) Patients with OSAS show higher levels of NGSP HbA1c and IFCC HbA1c.

2) There were significant correlations between some hydrocarbon metabolism parameters/indices and clinical sleep parameters.

3) Using the regression model, the NGSP HbA1c variability is explained in 23.3% of cases by age and oxygen desaturation index.

P2273
Vitamin D deficiency and excessive daytime sleepiness in obstructive sleep apnea: Is there a correlation?
Markus Blaskowsk1, Stephan Müller, Ernst Muller, Peter Zabel, Hans-Peter Hauber. Sleep Disorder Unit, Med. Klinik Borstel, Borstel, Germany

Aim: In this study we investigated if vitamin D deficiency syndrome is associated with excessive daytime sleepiness (EDS) in patients (pts) who were screened for obstructive sleep apnea (OSA) with polysomnography. Mechanisms accounting for the link between EDS and vitamin D deficiency may include disturbed sleep quality due to 25-OH-Vitamin D3 (VD) hypovitaminosis.

Methods: We enrolled 42 pts, who were screened for sleep related breathing disorders. VD serum levels under 30nmol/l were evaluate as hypovitaminosis D. Eworth Sleepiness Score (ESS) and Respiratory Disturbance Index (RDI) were measured in subgroups and compared with levels of VD with Fisher’s exact test.

Results: 29 men and 13 women completed the study with a mean age of 62.8 ± 9 yr. 39 patients had a RDI above normal (>5.5), mean RDI was 25.0, mean level of VD was 34.9 ± 15 pts had an ESS above 11. 3 of them had a RDI lower than 5 but a mean level of VD of 26.3 nmol/l. Pts with mild OSA (RDI 5-15.5) had significantly higher VD levels (41.6nmol/l, p<0.002) than pts without OSA (26.3 nmol/l) or with moderate (33 nmol/l) to severe OSA (32.8 nmol/l).

Discussion: We found increased VD levels in pts with mild OSA compared to moderate and severe OSA. This could be associated with VD associated noninflammatory myopathy and an increasing central nervous system homeostatic sleep pressure via effects of decreased levels of VD on TNF-alfa and/or prostaglandin D2. Our results suggest that pts with EDS and low RDI (<5.5h) may suffer from VD hypovitaminosis. More research is needed to determine if pts presenting with EDS and a low RDI should be screened for VD deficiency and if there is a molecular causation between EDS, OSA and low levels of VD.

P2274
Effect of unilateral lingual paralysis on swallowing and breathing coordination
Yacin Ouahchi, Jean Paul Marie, Eric Verin. Laboratoire de Chirurgie Expérimentale, Faculté de Médecine et de Pharmacie de Rouen, Rouen, France

Introduction: The tongue play an important role in swallowing, phonation and respiration. A motor lingual deficit is seen in many neurological disorders. However, its implication on swallowing and breathing coordination remain unknown.

The aim of this work was to study the ventilatory pattern during swallowing in rat with unilateral tongue paralysis.

Methods: The study was carried out on 10 wistar rats. Respiratory variables in unrestrained and healthy rats were measured during water swallowing using whole body plethysmography. This procedure was repeated for all rats before and after unilateral section of hypoglossal nerve (XII). Parameters studied were swallowing frequency and occurrence during inspiration or expiration, tidal volume (VT), total time of ventilatory cycle (TT) and respiratory drive (VT/TT).

Results: A difficulty of leaking was observed in all rats after unilateral hypoglos sal nerve section. The main finding was a decrease of respiratory rhythm and ventilatory drive during swallowing after hypoglosal nerve section. Swallowing rate (17±5/15sec) and occurrence in phases of respiratory cycles did not change.

Conclusion: This study demonstrated that swallowing activity and asynchrony decrease ventilatory drive during swallowing that can be considered as a mechanism neurologically determined to protect the pulmonary function.

P2275
Oxidative stress in obese children with sleep-disordered breathing
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Background: Sleep-disordered breathing (SDB) is prevalent in obese children. It is an independent risk factor for the metabolic syndrome. Oxidative stress is a possible linking mechanism and is reflected by serum uric acid (UA).

Aim: In this prospective follow-up study we focused on the effects of SDB on oxidative stress in childhood obesity, before and after weight loss treatment.

Methods: Obese children, attending an in-patient weight reduction program, between 10 and 18 years were included consecutively. All subjects had 1 baseline and 1 follow-up visit after 4-6 months of weight loss. UA was measured at both visits. A polymyography was performed at baseline and repeated in case of oxygen desaturation index (ODI) ≥ 2 at admission.

Results: 132 obese patients participated. Median age was 15.4 years (10.1-18.0). Median BMI z-score was 2.7. Excessive daytime sleepiness (EDS) was diagnosed in 39%. At baseline, UA concentration correlated negatively with mean nocturnal SaO2 (r=-0.29, P=0.001). There was a positive correlation between UA and ODI (r=0.18, P=0.04). Regression analysis showed a significant relation between UA and ODI, also after adjusting for BMI Z-score (partial r=0.18, P=0.04). Median decrease in BMI z-score was 32%. Weight loss treatment was successful in 71% of the subjects with SDB at baseline. UA concentration dropped in all patients. Improvements in UA were associated with improvements in ODI in linear regression analysis, after controlling for decrease in BMI Z-score (partial r=0.41; P<0.01).
Conclusion: There exists a significant association between UA and ODI at baseline, even after controlling for BMI z-score. Changes in ODI after treatment are reflected by changes in UA, independent of the degree of weight loss.

P2276 Cognitive learning function in OSA children
Silke Weber, Silvana Hilario, Érico Moreira da Silva, Victor Barbosa dos Santos, Cristiane Mendes-Chiolfi. Otorhinolaryngology, Botucatu Medical School State University, Botucatu, São Paulo, Brazil

Introduction: Obstructive Sleep Apnea (OSA) in children is associated with learning problems, as attention and memory.

Aim: To assess learning, memory and attention function in OSA children.

Methods: OSA children (IAH>=4 or LA>=1), both genders, aged 6 to 12 years, were submitted to psychological learning test (symbol, digits and code – WISC III Wechsler Intelligence Scale for Children). Test result were pondered for age, 10 points were considered normal, <8 as suspicious, < 7 as disturbed learning needing specialized support. WISC results were correlated to age, gender, IAH and desaturation index (ODI). Children with hearing loss, neurologic disease or genetic syndrome were excluded.

Results: 30 children, 9 girls, median age 8.5 years, were enrolled. Median IAH was 11.9 (4 to 65) and mean IOD 12.8 (3.4 to 71). 14 (46%) children, 10 boys, were considered suspicious, 9 (30%) 8 boys, were considered as having learning disturbance (LD). 6% girls were diagnosed LD in 2 or more subareas, showing global learning dysfunction as discrimination, velocity and attention. There was no correlation of learning disturbance to IAH or IOD (OSA severity), but it was correlated to male gender and to older age, 50% of children aged 9 to 12 years were diagnosed LD.

Conclusion: Learning disturbances are frequent in OSA children, independent of OSA severity. Exposing time to OSA seems to be an important factor. OSA children should undergo neurocognitive evaluation.

P2277 Variance over time of the obstructive sleep apnoea syndrome (OSAS) in patients with acute stroke
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OSAS is a cardiovascular risk factor with a high prevalence in patients with acute stroke in whom could be related to a worse prognosis and an increased mortality. The aims is to evaluate the evolution and the prognostic role of OSAS in stroke patients. This is a prospective study in which a respiratory polygraphic (RP) evaluation was performed 7 days after stroke (acute phase) and it was repeated on the third month (stable phase) of 42 patients were included (age 69±12.5 years, 54.8% male, BMI 27±4 kg/m², Epworth 7±3.6) and the RP was repeated on the 3rd month in 30 patients. The acute and stable phase studies showed a predominant hypopnoeas’ pattern.

Table 1. OSAS’ prevalence by AHI

<table>
<thead>
<tr>
<th>AHI</th>
<th>Acute phase patients(%)</th>
<th>Stable phase patients(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>3 (10%)</td>
<td>4 (13.3%)</td>
</tr>
<tr>
<td>≥5 &amp; &lt;20</td>
<td>9 (30%)</td>
<td>9 (30%)</td>
</tr>
<tr>
<td>≥20 &amp; &lt;30</td>
<td>5 (16.6%)</td>
<td>12 (40%)</td>
</tr>
<tr>
<td>≥30</td>
<td>13 (43.3%)</td>
<td>5 (16.6%)</td>
</tr>
</tbody>
</table>

Table 2. Acute & stable phase RP data

<table>
<thead>
<tr>
<th>RP data</th>
<th>Acute phase</th>
<th>Stable phase</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total AHI (median, range)</td>
<td>26.45 (0.9-74.8)</td>
<td>21.80 (0.95-56.1)</td>
<td>0.002</td>
</tr>
<tr>
<td>Central AHI (median, range)</td>
<td>0.25 (0-14.1)</td>
<td>0.2 (0-9.2)</td>
<td>0.271</td>
</tr>
<tr>
<td>Obstructive AHI (median, range)</td>
<td>2.45 (0-32.3)</td>
<td>2 (0-32.6)</td>
<td>0.130</td>
</tr>
<tr>
<td>Mixed AHI (median, range)</td>
<td>4.18 (0-31.5)</td>
<td>0.1 (0-33.3)</td>
<td>0.024</td>
</tr>
<tr>
<td>Hypopnoea index (median, range)</td>
<td>12.95 (0.64-46.7)</td>
<td>9.85 (0.33-37.2)</td>
<td>0.047</td>
</tr>
<tr>
<td>SaO2% (median ± DS)</td>
<td>94.3±2.28</td>
<td>94.2±2.75</td>
<td>0.316</td>
</tr>
<tr>
<td>COPW (median ± DS)</td>
<td>7.2±1.275</td>
<td>7.49±1.89</td>
<td>0.095</td>
</tr>
</tbody>
</table>

The results suggest that OSA study in acute stroke can lead to an overestimation of the prevalence of severe OSA, because it significantly reduces its severity in the stable phase. This information may be important when taking the decision to start CPAP treatment in acute stroke. In accordance with previous studies, there wasn’t found any relationship between OSA presence and the stroke functional outcome on the 3rd month.

P2278 Obstructive sleep apnea contributes acutely to left ventricular dysfunction independently of hypoxaemia
Katerina Vlami1, George Maziara2, Anastasia Papastefanou2, Angjir Antarak1, Nikos Kostomitsopoulos1, Vaggelis Balafas1, Alkiviadis Kostakis1, Spiros Papiotis1. 12nd Pulmonary Department, Attikon

Background: Obstructive sleep apnea has detrimental effects on function of left ventricle. It is also known that large decreases in intrathoracic pressure occur during obstructive apneas.

The aim of this study was to determine the acute changes in left sided heart function that occur in response to the decreased intrathoracic pressure in an obstructive sleep apnea model in rats under condition of normoxia.

Methods: Experiments were conducted in ten male adult Wistar rats weighing 350 gr, which were anaesthetized with Ketamine-Xylazin intraperitoneally. Animals were breathing after being tracheostomized and connected in a circuit with an electromagnetic valve which was closing periodically mimicking obstructive apneas. Arterial saturation was at SaO2>97% constantly. End Diastole Volume (EDV), Stroke Volume (SV) and Ejection Fraction (EF%) of left ventricle were measured with an anatomical M-mode echocardiographic method. Data analyzed and compared between quite breathing (time 0) and breathing after two hours of airway obstructions (time 0+2).

Results: The cardiac measurements were compared using the Wilcoxon signed-rank test. EDV and SV were statistically significant reduced (p<0.05) between time 0 and time 0+2. EF was reduced but not statistically significant at the same time period.

Conclusions: In this study our findings suggest that left ventricular function is affected acutely with reduction of EDV and SV after two hours of airway obstructions independently of hypoxaemia. These results suggest that in obstructive sleep apnea, negative intrathoracic pressure which occurs during apnea may contribute to changes in myocardial mechanics.

P2279 Respiratory symptoms and risk for obstructive sleep apnea in professional musicians
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Background: There is a controversy regarding the effects of playing wind musical instruments and singing on the respiratory system and the risk for nocturnal breathing abnormalities.

The aim of this study was to detect the prevalence of respiratory symptoms and the risk for Obstructive Sleep Apnea (OSA) in wind instrument players and singers.

Patients - Methods: 30 professional musicians (age 37.7±8.9 years, BMI 25.9±4.6 kg/m², 25 wind instrument players in bands and 5 singers) completed a questionnaire on demographic data and respiratory symptoms and the Berlin Questionnaire (BQ) for the assessment of the risk for OSA.

Results: Wind instrument players (80% males, 36% smokers, 32% alcohol users) reported sinusitis (24%), heartburn (20%), throat clearing (20%), jaw problems (16%), cough (16%) and nasal catarrh (16%). Singers (66% males, non-smokers, 20% alcohol users) reported reflux symptoms (60%), hoarseness (60%), throat clearing (40%), sinussitis (40%) and nasal catarrh (40%). Of the musicians, 4 instrumentalists (16%) and 1 singer (20%) had a high risk score on BQ. There was no association between smoking and respiratory symptoms in both instrumentalists and singers. Smoking was positively correlated with alcohol consumption (p<0.01, r=0.537) and heartburn (p<0.05, r=0.441) in instrumentalists.

Conclusion: Frequent respiratory symptoms and low risk for OSA were observed in wind instrument players and singers. Smoking habit together with alcohol consumption was common in instrumentalists, whereas singers adopted a healthier life style.