

## Respiratory Infections: HIV, Immunocompromised, TB, continued

**RESULTS:** We enrolled 35 of tuberculosis associated lung destruction and 33 of emphysema patients. They had similar FEV1 ( $0.86 \pm 0.22$ L in tuberculosis associated lung destruction and  $0.90 \pm 0.20$ L in emphysema,  $P=0.38$ ), but PaO<sub>2</sub> was significantly higher in tuberculosis associated lung destruction ( $83.9 \pm 7.0$ mmHg in tuberculosis associated lung destruction and  $75.0 \pm 8.6$ mmHg in emphysema,  $P<0.001$ ), even after correction for age. Alveolar-arterial oxygen gradient was significantly lower in emphysema and pathologic finding showed relatively well-preserved vascular structure in affected portion of emphysema patients and narrowed and destroyed vessels in tuberculosis associated lung destruction.

**CONCLUSION:** Patients with tuberculosis associated lung destruction have better gas exchange status than those with emphysema. The difference in ventilation-perfusion mismatch between two diseases can be explanation for this.

**CLINICAL IMPLICATIONS:** Although tuberculosis associated lung destruction and emphysema have similar clinical manifestation in severe cases, the degree of hypoxemia is milder in tuberculosis associated lung destruction.

**DISCLOSURE:** Sei Won Lee, None.

### UTILITY OF LACTATE DEHYDROGENASE VS BRONCHOALVEOLAR LAVAGE IN DIAGNOSIS OF PNEUMOCYSTIS CARINII PNEUMONIA

Roberto C. Santos MD\* Justin Pi MD Rashpal Singh MD Dat Nguyen MD Anubha Sinha MD Robby Ayoub MD Beshar Kabak MD Marc Adelman MD, FCCP Alan Klukowicz MD, FCCP Richard Miller MD, FCCP St. Michael's Medical Center, Newark, NJ

**PURPOSE:** Pneumocystis carinii is a common cause of pneumonia in immunocompromised patients. The level of serum lactate dehydrogenase (LDH) has been reported to be useful as a marker of Pneumocystis carinii pneumonia (PCP). The purpose of this study was to determine the utility of serum LDH as a marker of PCP among HIV patients, and also to determine if there is relationship between serum LDH levels and CD4+ lymphocyte count.

**METHODS:** Retrospective study comparing LDH values, CD4+ T-lymphocyte count, and length of hospital stay among 62 HIV patients admitted from 2004-2006 at St. Michael's Medical Center, Newark, New Jersey. Two sample t-test was used to determine difference between the LDH values of patient with PCP and those without PCP. Linear regression was used to determine relationship between LDH values and CD4 count.

**RESULTS:** All patients underwent bronchoscopy. 15 patients (24%) had a presumptive diagnosis of PCP using the Silver Stain. The mean value of pO<sub>2</sub>, total bilirubin, and LDH of PCP patients and non-PCP patients did not differ statistically. CD4+ T-lymphocyte count was significantly less in PCP patients. Nevertheless, Mean CD4+ T-lymphocyte count was less than 200 cells/mm<sup>3</sup> blood in both PCP and non-PCP patients. Mean LDH level was higher in PCP group (342.3) compared with non-PCP group (304.8).

**CONCLUSION:** Serum LDH level has limited utility as a marker of PCP among HIV patients. There is no relationship between serum LDH levels and CD4+ lymphocyte count among HIV patients.

**CLINICAL IMPLICATIONS:** The utility of serum LDH as a marker of PCP among HIV patients.

**DISCLOSURE:** Roberto Santos, No Financial Disclosure Information; No Product/Research Disclosure Information

## Sleep Apnea: Comorbid Conditions 12:30 PM - 2:00 PM

### PREVALENCE OF NOCTURNAL HYPOXEMIA IN OBSTRUCTIVE SLEEP APNEA PATIENTS WITH AND WITHOUT SYSTEMIC HYPERTENSION

Amine Dhouib doctor\* Mongi Ayed doctor Samia Chahbani doctor Nabil Beltaief doctor Raja Gouiaa doctor Manel Baccour doctor Djerba Hospital Laboratoire d'Exploration Fonctionnelle Respiratoire, Sfax, Tunisia

**PURPOSE:** The purpose of this study is to compare the prevalence of nocturnal hypoxemia (NH) in obstructive sleep apnea (OSA) patients with and without systemic hypertension (HT).

**METHODS:** Analytical, case-control study having examined nocturnal oxymetry data of 76 patients having untreated OSA diagnosed thanks to overnight ventilation polygraphy in a stable clinical condition (New York Heart Association (NYHA) Classification, functional class I or II [3], and diurnal SaO<sub>2</sub> > 90%). All followed OSA patients having HT and fulfilling inclusion criteria (n = 48) were consecutively included. 28 normotensive OSA patients matched to those with HT on age, sex, body mass index (BMI) and apnea-hypopnea index (AHI) were selected. OSA was defined as AHI  $\geq 10$  events/hour. The patients were categorized as having NH when nocturnal mean SaO<sub>2</sub> < 90%, lowest SaO<sub>2</sub> < 85%, or percentage of sleep time below 90% oxygen saturation (CT90) > 30%. HT was defined as ongoing pharmacological antihypertensive treatment and/or clinic blood pressure  $\geq 140/90$  mmHg.

**RESULTS:** Overnight sleep studies revealed "mean SaO<sub>2</sub> < 90%" in 15 OSA patients with HT but only in three control patients ( $p=0.0422$ . OR = 3,79). Average mean SaO<sub>2</sub> was similar in both groups. Average lowest SaO<sub>2</sub> was lower (72,4% versus 80,2%.  $p = 0,0138$ ), and "lowest SaO<sub>2</sub> < 85%" was more common (77,1% versus 50%.  $p = 0,0153$ . OR = 3,36) in hypertensive patients compared to normotensive subjects. Percentage of "CT90 > 30%" did not differ significantly between the groups but average CT90 was higher in HT group (23% versus 10,8%.  $p = 0,0398$ ).

**CONCLUSION:** The findings of the present study show that NH (defined as mean SaO<sub>2</sub> < 90% or lowest SaO<sub>2</sub> < 85%) is significantly more common among middle-aged and elderly OSA patients with HT compared not only to age-, sex- and BMI- but also to AHI-matched controls without HT.

**CLINICAL IMPLICATIONS:** This result suggests that NH and its extent intervene in the increase of diurnal blood pressure among patients with OSA independently of AHI.

**DISCLOSURE:** Amine Dhouib, No Financial Disclosure Information; No Product/Research Disclosure Information

### OBSTRUCTIVE SLEEP APNEA IN PATIENTS WITH REFRACTORY HYPERTENSION: PREVALENCE AND SEVERITY IN A TUNISIAN POPULATION

Amine Dhouib doctor\* Mongi Ayad doctor Samia Harrabi doctor Nabil Beltaief doctor Raja Gouiaa doctor Manel Baccour doctor Djerba Hospital, Medenine, Tunisia

**PURPOSE:** To reveal the prevalence and the severity of obstructive sleep apnea (OSA) in patients with refractory hypertension (RH) in a Tunisian population.

**METHODS:** prospective study carried out in 33 patients with RH and 30 patients with controlled hypertension (CH) followed in Djerba hospital. RH was defined as a clinic systolic blood pressure (BP)  $\geq 140$  and/or diastolic BP  $\geq 90$  mmHg despite the low sodium diet and the combination of 3 antihypertensive medications (AHM) at recommended doses including a diuretic. Patients with controlled hypertension (CH) received 1  $\leq$ ; AHM  $\leq$ ; 3, had clinic BP < 140/90 mmHg and were matched to those with RH on age, sex and body mass index (BMI). Patients with known OSA were excluded. All subjects underwent overnight ventilation polygraphy to determine apnea-hypopnea index (AHI). The ones with AHI  $\geq 10$  events/hour were classified as having OSA.

**RESULTS:** OSA was significantly more frequent (prevalence = 75,7% versus 46,6%,  $p = 0,017$ ) and AHI was significantly higher (29,9 events/hour versus 15,4 events/hour,  $p = 0,001$ ) among patients with RH compared with those with CH.

**CONCLUSION:** Eight patients on ten with RH have OSA.

**CLINICAL IMPLICATIONS:** This justifies the systematic practice of ventilation polygraphy in patients with RH.

**DISCLOSURE:** Amine Dhouib, No Financial Disclosure Information; No Product/Research Disclosure Information

### RELATIONSHIPS OF APNEA HYPOPNEA INDEX AND BODY MASS INDEX TO PREMATURE VENTRICULAR ARRHYTHMIAS

Basel Al Haddad MD Ali El Atat MD\* Mohammad-Ali A. El-Harakeh MD Jean-Louis Giardin MD John Kassotis MD Samir Fahmy MD SUNY-Downstate Medical Center, Brooklyn, NY

**PURPOSE:** In this study, we investigated the relationships of apnea hypopnea index (AHI) and body mass index (BMI) to premature ventricular arrhythmias (PVC) among patients with obstructive sleep apnea

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(OSA). We also examined whether continuous positive airway pressure has a positive effect on PVC.

**METHODS:** We conducted a prospective study of patients who were evaluated for OSA at the Kings County Hospital Sleep Clinic. Polysomnographic data were obtained both at baseline and during OSA treatment with Continuous Positive Airway Pressure. The present analysis of PVC's focused on EKG recordings that were analyzed by a trained investigator. We looked at patients with severe OSA who had an AHI  $\geq 30$  and analyzed their EKG's. Patients with PVC of 10 or more per hr were considered at risk and included in the analysis.

**RESULTS:** 154 patients with a mean age ( $\pm$  SD) of  $46.27 \pm 12.54$  yrs were included in the study. 72% were Black; 3% White; 22% Hispanic; and 3% other ethnicities. 44% of the patients were females, and 52% were males. Overall, 46% of the patients were diagnosed with Severe OSA; their average BMI ( $\pm$  SD) was  $43.90 \pm 9.90$ . Of the OSA patients, 8% had PVC's  $\geq 10$ . Pearson correlation analyses revealed no significant relationships of AHI and BMI to PVC [ $r = -.12$ ,  $r = -.04$ , respectively]. Using repeated-measures ANOVA, we found a significant reduction in both AHI ( $\pm$  SD) [ $77 \pm 10$  vs.  $13 \pm 5$ ;  $F = 45$ ,  $P < 0.0001$ ] and PVC ( $\pm$  SD) [ $77 \pm 10$  vs.  $13 \pm 5$ ;  $F = 45$ ,  $P < 0.0001$ ] subsequent to CPAP treatment.

**CONCLUSION:** BMI and AHI did not show a significant association with PVC, but administration of CPAP decreased the incidence of AHI and PVC. Reduction in PVC's might be due to the decrease in the transmural pressure.

**CLINICAL IMPLICATIONS:** CPAP therapy is an important approach in the management of ventricular arrhythmias in patients with severe OSA.

**DISCLOSURE:** Ali El Atat, No Financial Disclosure Information; No Product/Research Disclosure Information

### EVALUATE ETHNIC DIFFERENCES IN THE PREVALENCE OF DIABETES IN OSA PATIENTS

Salim R. Surani MD, FCCP\* Shyam Subramanian MD, FCCP Raymond Aguillar RT Raghu Reddy MD Nelly Gracia Medical Student Travis Bias Medical Student Texas A&M University, Corpus Christi, TX

**PURPOSE:** Recent studies have shown strong association between insulin resistance, diabetes mellitus and sleep apnea. Ethnic variance in the prevalence of diabetes in patients with OSA has not been well described. The objective of this study was to describe the prevalence of diabetes mellitus in a cohort of Hispanic and Caucasian patients with OSA.

**METHODS:** A retrospective chart review of 103 Hispanic patient, and 70 Caucasian patients with OSA was carried out. All patients had undergone full night baseline polysomnography. We excluded charts of patient who underwent split night studies and those who did not have REM sleep.

**RESULTS:** Both groups were well-matched in terms of age, gender distribution and BMI. Prevalence of self-reported diabetes mellitus in Hispanic patient with OSA was 42%, as compared to Caucasian with 24% ( $p$  value = 0.005). A REM AHI of greater than 20 was significantly associated with increase prevalence of diabetes in Hispanic population; this association was not seen in the Caucasian population (Table 1).

**CONCLUSION:** There is a very high prevalence of diabetes mellitus in an unselected cohort of Hispanic patients with OSA, as compared to Caucasians. A high REM AHI seems to be a strong predictor of the presence of diabetes mellitus, in Hispanics but not in Caucasians.

**CLINICAL IMPLICATIONS:** Hispanic patients with sleep apnea should be screened for glycemic intolerance, especially when high REM AHI is noted.

**DISCLOSURE:** Salim Surani, No Financial Disclosure Information; No Product/Research Disclosure Information

### TNF-ALPHA LEVEL IS DIRECTLY ASSOCIATED WITH OBSTRUCTIVE SLEEP APNEA IN OBESE ASIAN INDIANS

Bharat Bhushan PhD Randeep Guleria MD\* Kalpana Luthra PhD Anoop Misra MD All India Institute of Medical Sciences, New Delhi, India

**PURPOSE:** Obstructive sleep apnoea (OSA) is a common sleep disorder problem in obese people. Inflammation has been shown to play a significant role in OSA. Tumor necrosis factor alpha (TNF- $\alpha$ ), a marker of inflammation is an important predictor of cardiovascular events. The relationship of TNF- $\alpha$  levels with OSA is conflicting and there is no data in Asian Indians. The purpose of the current study was to investigate the

relationship between serum TNF- $\alpha$  levels in obese Asian Indians with and without OSA.

**METHODS:** We studied 141 obese subjects (BMI  $> 25$  kg/m<sup>2</sup>). Polysomnography was done in all subjects and on the bases of Apnoea-Hypopnea index, patients were distributed in two categories (I) cases (obese with OSA;  $n=78$ ) and (II) controls (obese without OSA;  $n=63$ ). Both groups had comparable age and percentage body fat. Level of TNF- $\alpha$  was estimated in the serum sample of all subjects.

**RESULTS:** TNF- $\alpha$  levels (Mean $\pm$ S.D) were significantly higher in obese subjects with OSA ( $31.55 \pm 16.59$  pg/ml) than in obese subjects without OSA ( $23.96 \pm 9.41$  pg/ml,  $p < 0.05$ ). No significant difference was seen in percentage body fat in cases ( $36.8 \pm 10.4$ ), when compared with controls ( $35.6 \pm 9.6$ ). TNF- $\alpha$  levels also showed an association with severity of OSA. There was a significant difference between hip circumference [ $(100.22 \pm 6.58)$ cm vs  $(105.84 \pm 12.32)$ cm] and neck circumference [ $(38.33 \pm 3.26)$ cm vs  $(39.96 \pm 4.40)$ cm] in cases as compared to controls.

**CONCLUSION:** In obese Asian Indians with OSA, significantly elevated serum TNF- $\alpha$  levels were seen as compared to the obese subjects without OSA. TNF- $\alpha$  levels also correlated with severity of OSA. This is the first study showing the association of TNF- $\alpha$  levels in obese Asian Indians having OSA.

**CLINICAL IMPLICATIONS:** Inflammation, as assessed by TNF- $\alpha$  level, is an important component of OSA. This may have therapeutic and prognostic implications in these patients.

**DISCLOSURE:** Randeep Guleria, No Financial Disclosure Information; No Product/Research Disclosure Information

### EFFECT OF UVULOPALATOPHARYNGOPLASTY ON SERUM NITRIC OXIDE DERIVATIVES IN OBSTRUCTIVE SLEEP APNEA

Ching-Chi Lin MD\* Kuo-Sheng Lee MD Ying-Piao Wang MD Shwu-Fang Liaw MS Chung-Hsin Chiu MBBS Mackay Memorial Hospital, Taipei, Taiwan ROC

**PURPOSE:** To evaluate the effect of uvulopalatopharyngoplasty (UPPP) on serum level of nitric oxide derivatives (NOx) in obstructive sleep apnea syndrome (OSAS).

**METHODS:** Ten healthy subjects and 20 subjects with OSAS who desired UPPP were prospectively enrolled. All underwent measurement of serum levels of NOx from peripheral blood samples as well as a sleep study. These studies were repeated 3 months after UPPP in patients with OSAS.

**RESULTS:** Serum level of NOx in OSAS patients before UPPP was lower when compared with normal subjects ( $14.2 \pm 5.7$  v.s.  $30.8 \pm 7.6$   $\mu$ M). After UPPP, the NOx remained reduced in those whose OSAS did not respond to surgery (group IIb,  $n = 12$ ) ( $14.8 \pm 6.4$  v.s.  $14.9 \pm 5.6$   $\mu$ M), while it returned to normal level in patients whose OSAS improved after UPPP (group IIa,  $n = 8$ ) ( $13.2 \pm 5.4$  v.s.  $29.3 \pm 6.3$   $\mu$ M).

**CONCLUSION:** In conclusion, reduced serum NOx in patients with OSAS returns to normal if UPPP results in amelioration of OSAS.

**CLINICAL IMPLICATIONS:** Reduced serum NOx in patients with OSAS will return to normal with effective UPPP therapy which is congenial to CPAP treatment, and to determine serum NOx level return to normal or not depend primarily on effectiveness of treatment.

**DISCLOSURE:** Ching-Chi Lin, No Financial Disclosure Information; No Product/Research Disclosure Information

### SEXUAL DYSFUNCTION IN WOMEN WITH OBSTRUCTIVE SLEEP APNEA

Shyam Subramanian MD Ashesh D. Desai MD\* Sandra Carson MD C. Rambaut RRT, RPSGT Tammy Wiggins RRT, RPSGT Baylor College of Medicine, Houston, TX

**PURPOSE:** Female sexual dysfunction is vastly under-recognized but has been previously described in chronic disease states. Sexual dysfunction in male patients with obstructive sleep apnea (OSA) is well-described, but has not been previously reported in females. The objective of this study was to assess the prevalence of sexual dysfunction in women with OSA.

**METHODS:** Sexual function of twenty one consecutive pre-menopausal women with OSA, referred to our sleep lab, and who had a positive study for sleep apnea (AHI  $> 5$ ), were included. They were administered the Female Sexual Function Index (FSFI) questionnaire. This is a