

Library Corner

September 2011



Pediatric Pulmonology

[Mannitol dry powder challenge in comparison with exercise testing in children \(pages 842–848\)](#)

Juerg Barben, Claudia E. Kuehni, Marie-Pierre F. Strippoli, Barbara Schiller, Juerg Hammer and Daniel Trachsel, On behalf of the Swiss Paediatric Respiratory Research Group

Respiration

Percentiles of Inspiratory Capacity in Healthy Nonsmokers: A Pilot Study

[Bottai, M.](#) , [Pistelli, F.](#) , [Di Pede, F.](#) , [Baldacci, S.](#), [Simoni, M.](#), [Maio, S.](#) , [Carrozzi, L.](#), [Viegi, G.](#)

Respiration 2011;82:254-262



ERJ 2011 gives us another reason to drink red wine...

Dietary factors and lung function in the general population: wine and resveratrol intake

M. Siedlinski, J.M.A. Boer, H.A. Smit, D.S. Postma, and H.M. Boezen

Eur Respir J 2011 erj01841-2010

And from Graham Hall a whole edition of ERS!

Editorial

Sleep apnoea syndrome: how will physiologic knowledge position personalised medicine?

F. Sériès

EUROPEAN RESPIRATORY REVIEW 2011;20 127-129

<http://err.ersjournals.com/cgi/content/full/20/121/127>

A first step against idiopathic pulmonary fibrosis

B. Crestani

EUROPEAN RESPIRATORY REVIEW 2011;20 130-131

<http://err.ersjournals.com/cgi/content/full/20/121/130>

Idiopathic pulmonary fibrosis: present understanding and future options

R.M. du Bois

EUROPEAN RESPIRATORY REVIEW 2011;20 132-133

<http://err.ersjournals.com/cgi/content/full/20/121/132>

European Respiratory Update

Sleep apnoea syndrome in 2011: current concepts and future directions

P. Lévy, R. Tamisier, C. Minville, S. Launois, and J-L. Pépin

EUROPEAN RESPIRATORY REVIEW 2011;20 134-146

<http://err.ersjournals.com/cgi/content/full/20/121/134>

Review

Physiological techniques for detecting expiratory flow limitation during tidal breathing

N.G. Koulouris and G. Hardavella

EUROPEAN RESPIRATORY REVIEW 2011;20 147-155

<http://err.ersjournals.com/cgi/content/abstract/20/121/147>

Pulmonary aspergillosis: a clinical review

M. Kousha, R. Tadi, and A.O. Soubani

EUROPEAN RESPIRATORY REVIEW 2011;20 156-174

<http://err.ersjournals.com/cgi/content/abstract/20/121/156>

Beyond corticosteroids: future prospects in the management of inflammation in COPD

N. Roche, R. Marthan, P. Berger, A. Chambellan, P. Chanez, B. Aguilaniu, P-Y Brillet, P-R Burgel, A. Chaouat, P. Devillier, R. Escamilla, R. Louis, H.

Mal, J-F Muir, T. Pérez, T. Similowski, B. Wallaert, and M. Aubier

EUROPEAN RESPIRATORY REVIEW 2011;20 175-182

<http://err.ersjournals.com/cgi/content/abstract/20/121/175>

Night-time symptoms: a forgotten dimension of COPD

A. Agusti, J. Hedner, J.M. Marin, F. Barbé, M. Cazzola, and S. Rennard
EUROPEAN RESPIRATORY REVIEW 2011;20 183-194
<http://err.ersjournals.com/cgi/content/abstract/20/121/183>

Challenges in idiopathic pulmonary fibrosis trials: the point on end-points

C. Albera
EUROPEAN RESPIRATORY REVIEW 2011;20 195-200
<http://err.ersjournals.com/cgi/content/abstract/20/121/195>

Emerging potential treatments: new hope for idiopathic pulmonary fibrosis patients?

U. Costabel
EUROPEAN RESPIRATORY REVIEW 2011;20 201-207
<http://err.ersjournals.com/cgi/content/abstract/20/121/201>

Correspondence

Pulmonary lymphangitic carcinomatosis presenting as severe interstitial lung disease in a 15-year-old female

F.J. Gilchrist, H. Alton, M-A Brundler, L. Edwards, A. Plunkett, and S. Rao
EUROPEAN RESPIRATORY REVIEW 2011;20 208-210
<http://err.ersjournals.com/cgi/content/full/20/121/208>

Pulmonary nocardiosis in immunocompetent patients: can COPD be the only risk factor?

F. Rivière, M. Billhot, C. Soler, F. Vaylet, and J. Margery
EUROPEAN RESPIRATORY REVIEW 2011;20 210-212
<http://err.ersjournals.com/cgi/content/full/20/121/210>

And from Kevin Gain...

Respiratory Medicine, Volume 105 • Issue 10
October 2011

[Quality of Spirometry tests performed by 9893 adults in 14 countries: The BOLD Study](#)

P. Enright, W.M. Vollmer, B. Lamprecht, R. Jensen, A. Jithoo, W. Tan, M. Studnicka, P. Burney, S. Gillespie, A.S. Buist

Summary

Objective

to determine the ability of participants in the Burden of Obstructive Lung Disease (BOLD) study to meet quality goals for spirometry test session quality and to assess factors contributing to good quality.

Methods

Following 2 days of centralized training, spirometry was performed pre- and post-bronchodilator (BD) at 14 international sites, in random population-based samples of persons aged ≥ 40 years, following a standardized protocol. The quality of each test session was evaluated by the spirometer software and an expert reading center. Descriptive statistics were calculated for key maneuver acceptability variables. A logistic regression model identified the predictors of acceptable quality test sessions.

Results

About 96% of test sessions met our quality goals for a low back-extrapolated volume (BEV), time to peak flow (PEFT), and end-of-test volume (EOTV). The mean forced expiratory time (FET) was 10.4 s. Ninety percent of the maneuvers with the highest FVC had a forced expiratory time (FET) > 6.8 s. About 90% of test sessions had FEV₁ and FVC which were repeatable within 150 mL. Test quality was slightly better for post-BD test sessions when compared to pre-BD. Independent predictors of adequate test quality included female sex, younger age, higher education, lack of dyspnea, higher pre-BD FEV₁, less BD responsiveness, and study site.

Conclusions

Quality goals for spirometry tests were met about 90% of the time in these population-based samples of adults from several countries.

Cardiopulmonary response to exercise in patients with liver cirrhosis and impaired pulmonary gas exchange

[Cardiopulmonary response to exercise in patients with liver cirrhosis and impaired pulmonary gas exchange](#)

Malcolm Lemyze, Sébastien Dharancy, Remy Nevière, Benoît Wallaert

Summary

Maximal exercise capacity and pulmonary gas exchange are both commonly impaired in liver cirrhosis. Apart from rare cases of hepatopulmonary syndrome, it is still unknown whether these moderate pulmonary gas exchange abnormalities can alter aerobic capacity of cirrhotic patients.

Resting pulmonary function tests and symptom-limited cardiopulmonary exercise testing were prospectively investigated in 30 patients with liver cirrhosis exhibiting a widened alveolar-arterial oxygen gradient ($P(A-a)O_2 > 30$ mm Hg at peak exercise) without pulmonary vascular dilatations at contrast-enhanced echocardiography. Data were compared with those of 30 normoxemic cirrhotic controls (matched for age, gender, body mass index, etiology and severity of liver disease, smoking habits, hemoglobin level, and beta-blocker therapy).

Resting cardiopulmonary parameters were within normal range in both groups except carbon monoxide lung transfer (TLCO, 60.4 ± 2.9 vs $74.3 \pm 2.8\%$ in controls, $p = 0.0004$) and $P(A-a)O_2$ (28.8 ± 2 vs 15.3 ± 2 mm Hg in controls, $p < 0.0001$). Cirrhotics with impaired gas exchange during exercise exhibited a significant reduction in maximal oxygen uptake ($\dot{V}O_{2\max}$, 1.18 ± 0.07 (53% predicted) vs 1.41 ± 0.07 L/min (62% predicted), $p = 0.004$), a higher ventilation level at ventilatory threshold ($\dot{V}_E/\dot{V}O_2$, 39.2 ± 1.5 vs 35.3 ± 1.5 , $p = 0.01$) without ventilatory limitation, and a greater dead space to tidal volume ratio ($V_D/V_{T\max}$, 0.32 ± 0.01 vs 0.25 ± 0.01 , $p = 0.01$). $\dot{V}O_{2\max}$ correlates negatively with $V_D/V_{T\max}$ ($r^2 = 0.36$; $p < 0.0001$). There were no differences in cardiac or metabolic response to exercise between groups.

Taken together these findings suggest that clinically undetectable pulmonary vascular disorders can slightly contribute to further reduce exercise capacity of cirrhotic patients.

Keywords: [Exercise testing](#), [Liver cirrhosis](#), [Exercise tolerance](#), [Hypoxemia](#), [Hepatopulmonary syndrome](#)

[Effects of obstructive sleep apnea and its treatment on cardiovascular risk in CAD patients](#)

Qing Zhao, Zhi-hong Liu, Zhi-hui Zhao, Qin Luo, R. Doug McEvoy, Hong-liang Zhang, Yong Wang

Summary

This study, in optimally treated CAD patients with newly diagnosed OSA, focused on (1) The relationships between OSA and serum biomarkers of four potential pathways of cardiovascular injury in OSA: high-sensitivity C-reactive protein (hs-CRP), endothelin-1 (ET-1), N terminal pro B type natriuretic peptide (NT-proBNP) and fibrinogen; and (2) The effect of continuous positive airway pressure (CPAP) therapy on these markers.

151 Chinese patients with proven CAD and standard medication were enrolled. After polysomnography, patients were classified into four groups according to apnea–hypopnea index (AHI): no OSA ($n = 25$); mild OSA ($n = 50$); moderate OSA ($n = 43$); severe OSA ($n = 33$). Morning levels of hs-CRP, ET-1, NT-proBNP and fibrinogen were assayed and repeated in severe OSA patients after 3-months CPAP treatment.

Hs-CRP was greater in patients with severe OSA than those with no OSA or mild OSA ($P = 0.001$, $P = 0.003$; respectively). After adjustment for confounders, the hs-CRP levels correlated most strongly with AHI and oxygen desaturation index (ODI) ($r = 0.439$, $P < 0.001$; $r = 0.445$, $P < 0.001$; respectively). In stepwise multiple linear regressions, the strongest predictor of hs-CRP levels was ODI ($P < 0.001$). After 3 months of CPAP treatment, the hs-CRP levels decreased ($P = 0.005$) in CAD patients with severe OSA.

In CAD patients on current optimal medications, hs-CRP is significantly correlated with the severity of OSA, and the elevated hs-CRP levels can be decreased by CPAP. This suggests that OSA could activate vascular inflammation in CAD patients despite current best practice medications.

Keywords: [Coronary artery disease](#), [Continuous positive airway pressure](#), [Obstructive sleep apnea](#), [High sensitivity C-reactive protein](#)

[CPAP increases exercise tolerance in obese subjects with obstructive sleep apnea](#)

Sachin R. Pendharkar, Willis H. Tsai, Neil D. Eves, Gordon T. Ford, Warren J. Davidson

Summary

Obese subjects commonly suffer from exertional dyspnea and exercise intolerance. Preliminary evidence suggests that treatment with nocturnal continuous positive airway pressure (nCPAP) may improve dyspnea in obese patients with obstructive sleep apnea (OSA), but the effect on exercise tolerance is unknown. This study sought to investigate whether nCPAP improves exercise tolerance and exertional dyspnea in obese patients with OSA.

Obese patients prescribed nCPAP for moderate/severe OSA and without cardiopulmonary disease were recruited. Patients completed a constant-load exercise test and Baseline and Transitional Dyspnea Index questionnaires (BDI/TDI) at baseline and after one and three months of nCPAP. Primary outcome was change in constant-load exercise time from baseline to one and three months. Secondary outcomes included changes in isotime dyspnea, isotime leg fatigue and BDI/TDI score at one and three months.

Fifteen subjects (body mass index = 43 kg m⁻², apnea-hypopnea index = 49hr⁻¹) were studied. Constant-load exercise time increased by 2.0 min (40%, $p = 0.02$) at one month and 1.8 min (36%, $p = 0.04$) at three months. At one and three months, isotime dyspnea decreased by 1.4 ($p = 0.17$) and 2 units ($p = 0.04$), and leg fatigue decreased by 1.2 ($p = 0.18$) and 2 units ($p = 0.02$), respectively. BDI/TDI scores were 2.7 ($p = 0.001$) and 4.5 points ($p < 0.001$) at one and three months. Peak oxygen consumption and static pulmonary function were unchanged.

Nocturnal CPAP improves exercise tolerance and dyspnea in obese patients with OSA. Effects on exercise time and chronic dyspnea were seen after one and three months of nCPAP, while exertional dyspnea was only improved at three months.

Keywords: [Obesity](#), [Obstructive sleep apnea](#), [Dyspnea](#), [Exercise](#), [Continuous positive airway pressure](#)

Abbreviations: [AHI](#), [apnea-hypopnea index](#), [ANOVA](#), [analysis of variance](#), [BDI/TDI](#), [baseline dyspnea index/transitional dyspnea index](#), [BMI](#), [body mass index](#), [IC](#), [inspiratory capacity](#), [MRC](#), [Medical Research Council](#), [nCPAP](#), [nocturnal continuous positive airway pressure](#), [OSA](#), [obstructive sleep apnea](#), [SD](#), [standard deviation](#), [VO₂](#), [oxygen consumption](#)