

Spirometry in primary care in Navarre, Spain

J. Hueto, P. Cebollero, I. Pascal, J.A. Cascante, V.M. Eguía, F. Teruel, M. Carpintero

Sección de Neumología. Hospital Virgen del Camino. Pamplona.

Objective. To analyze the use and quality of spirometry in primary care settings in Navarre, Spain.

Material and methods. A questionnaire was completed simultaneously by professionals responsible for spirometry in all of the primary health care centers in Navarre. Data were collected on availability, model of spirometer, frequency of use, calibration, methods, personnel responsible for testing, and training of personnel. Then, baseline spirometry without a bronchodilator test was performed in 171 patients in their primary health care center and then the test was repeated on the same day in a hospital pneumology department. Spirometry was supervised by 2 pneumologists who jointly assessed the acceptability of the flow-volume curves. The quality of spirometry was assessed according to the recommendations of the American Thoracic Society and the interpretation of spirometry results according to the criteria of the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR).

Results. A total of 90.9% of primary health care centers in Navarre have a spirometer, although 22% of those spirometers have never been used. Only 2 centers performed between 10 and 20 spirometry tests per week and none performed more than 20. In 96% of primary health care centers the spirometers were not regularly

calibrated. The professionals who performed spirometry were not dedicated for that task in 51.2% of cases, and the mean period of supervised training was 10 hours. When comparisons were made between the mean values obtained in the primary care centers and the pneumology department, statistically significant differences were detected for forced vital capacity ($P < .0001$) and forced expiratory volume in the first second ($P = .0002$). Significant differences were also found between the flow-volume curves performed in the 2 different care settings for the initial and end portions of the curve as well as for the slope. The criteria for reproducibility recommended by the American Thoracic Society were not met in 76% of cases for forced vital capacity and 39.7% of cases for forced expiratory volume in the first second. Incorrect functional diagnosis occurred in 39.7% of spirometry tests and there was a tendency in the primary care settings to falsely diagnose patterns as restrictive and to inadequately classify the severity of obstruction.

Conclusions. Despite the fact that spirometers are available in the majority of primary health care centers in Navarre, we found a marked underuse of these devices and little compliance with recommendations for the use of spirometry. Furthermore, the quality of the measurements performed in this care setting was very low. (*Arch Bronconeumol* 2006 Jul; 42 (7): 326-331).

Prognostic significance of the hepatopulmonary syndrome in liver cirrhosis

J.L. Alonso, J.M. Zozaya, J. Gutiérrez, M.L. Abinzano, M.A. Urbieta, F.J. Annicchero

Servicio de Medicina Interna. Hospital de Navarra. Pamplona.

Background and objective. The prognosis of hepatopulmonary syndrome (HPS) has been only rarely investigated.

Patients and methods. We investigated the survival of 32 cirrhotic patients, 14 (44%) with HPS and 18 with a normal gaseous exchange (NGE), and the associated factors. RESULTS: During a mean (standard deviation) of 56 (27) months, 9 patients in the HPS group (relative risk: 0.64) and 4 patients in the NGE group (relative risk: 0.22) died. The odds ratio was 6.42 ($p < 0.01$; 95% confidence

interval, 0.04-0.80). Patients in the HPS group died after 44 (31) months, while patients in the NGE group died 65 (21) months after inclusion ($p < 0.05$). Overall, 46% of deaths were liver related. Factors associated with death were the right to left shunting and the increased plasmatic renin levels. Of note, the plasmatic volume and diffusing capacity were protective.

Conclusions. The coexistence of HPS worsens the prognosis in liver cirrhosis. (*Med Clin (Barc)* 2006 Jun 24; 127 (4): 133-135).

Severe sleep apnea and risk of ischemic stroke in the elderly

R. Muñoz, J. Durán-Cantolla, E. Martínez-Vila, J. Gallego, R. Rubio, F. Aizpuru, G. de la Torre

Department of Neurology. Hospital de Navarra. Pamplona.

Background and purpose. Convincing evidence of a causal relationship between sleep apnea and stroke has been shown recently in several prospective, well-designed studies. However, these studies have focused on middle-aged people, excluding the elderly population from analysis. To investigate whether sleep apnea represents an independent risk factor in this population, we performed a prospective longitudinal study in a population-based cohort of subjects from 70 to 100 years old.

Methods. Within the context of the Vitoria Sleep Project, a population-based study designed to investigate the prevalence of sleep apnea in the population of Vitoria, Spain, we performed a 6-year longitudinal study in a subsample cohort of 394 noninstitutionalized, initially event-free subjects (70 to 100 years old, median 77.28 years, 57.1% males). Demographic and polysomnographic data and known confounding factors (age, sex, smoking and alcohol consumption status, body mass index, systolic and

diastolic blood pressure, total serum cholesterol levels, and the presence or absence of diabetes mellitus, atrial fibrillation, and hypertension) were assessed at baseline. Hazard ratio for developing an ischemic stroke in relation to the apnea-hypopnea index at baseline was calculated.

Results. Over the 6-year follow-up period, 20 ischemic strokes were registered. After adjustment for confounding factors, subjects with severe obstructive sleep apnea hypopnea (defined as apnea-hypopnea index $>or=30$) at baseline had an increased risk of developing a stroke (hazard ratio=2.52, 95% CI=1.04 to 6.01, $P=0.04$).

Conclusions. This study shows that severe obstructive sleep apnea hypopnea (defined as apnea-hypopnea index $>or=30$) increases the risk of ischemic stroke in the elderly population, independent of known confounding factors. (*Stroke* 2006 Sep; 37 (9): 2317-2321).

Anti-cyclic citrullinated peptide antibody in rheumatoid arthritis: relation with disease aggressiveness

N. del Val, R. Ibáñez, C. Fito, R. Gutiérrez, E. Loza

Rheumatology Department. Navarra Hospital. Pamplona.

Objective. To analyse the value of the anti-cyclic citrullinated peptide antibody (anti-CCP) in patients with rheumatoid arthritis (RA) as a prognostic factor, as well as its relationship with disease activity.

Methods. A cross-sectional study was made on 89 patients with RA. The following values were assessed: erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), rheumatoid factor (RF), anti-CCP, Disease Activity Score 28 (DAS 28), Modified Health Assessment Questionnaire score (M-HAQ) and simplified radiologic score of Sharp/Van der Heijde (SENS: simple erosion narrowing score).

Results. Sixty-four percent of the patients were anti-CCP positive, from which 36.8% were negative for RF. Among negative RF patients, 48.3% had anti-CCP antibody. The average value of DAS 28 in anti-CCP positive patients was 4.31 (SD 1.27) compared to 3.30

(SD 1.55) for anti-CCP negative ($p <or=0.001$). There was a significant correlation between anti-CCP levels and CRP value ($p <or= 0.011$). 78.9% of anti-CCP positive patients presented erosions as opposed to a 53.1% of those with negative anti-CCP ($p <or= 0.011$), OR 3.3 (95% CI: 1.3-8.5). SENS in anti-CCP positive patients was significantly greater than in anti-CCP negative patients, 22.6 (SD 20.7) versus 13.88 (SD 19.24) ($p <or= 0.054$). Patients with high levels of anti-CCP (> 200 U/ml) had higher SENS ($p < 0.05$). There was no correlation between M-HAQ and anti-CCP.

Conclusion. Prevalence of anti-CCP was higher among patients with higher activity. Patients with higher levels of anti-CCP antibody had more aggressive disease, with greater activity (elevated values in DAS 28 and CRP) and more severe radiological damage (more erosions and higher radiological damage, SENS). (*Clin Exp Rheumatol* 2006; 24 (3): 281-286).

Influence of nutritional education on management of infantile-juvenile obesity

T. Durá

Departamento de Pediatría. Facultad de Medicina. Universidad de Navarra. España.

Objective. To analyze the therapeutic response in a group of obese patients to a therapy program based on nutritional education, auto-management, and intensive follow-up.

Material and methods. Sixty clinical charts have been reviewed of patients with exogenous obesity (42 female and 18 male patients) submitted to management program and intensive follow-up (every three months controls) for a continuous period of 24 months. The following variables were registered: sex, chronological age (CA), bone age (BA), and percent body mass index (%BMI) in he first visit; %BMI in each control day, and therapeutic response (drop-outs, improvements, and failures) at 12 and 24 months of follow-up.

Results. Mean values for age and CA/BA ratio were 9.7 years (males: 9.7; and females: 9.7), and 1.12 (males: 1.1; and females: 1.12), respectively. Average basal

%BMI was 144.7 (95% CI: 4.4), being significantly higher in male patients. There was a progressive decrease from basal %BMI that was statistically significant from 18 months of follow-up in female patients ($p < 0.05$). At 12 and 24 months of follow-up, 20% and 30% had mild improvement, although 58.3% and 60% had a decreased basal %BMI, respectively. At 24 months of follow-up, the rate failure was significantly higher ($p < 0.05$) in males (83.3% vs 42.8%), where the success rate was higher among females (40.5% vs 5.5%), the total dropout rate being 15%. Growth was kept normal independently of gender and/or therapeutic response.

Conclusions. Individualized information and intensive follow-up favor good acceptance and/or adhesion to the therapeutic program, and it allows for instilling health education to patients and/or relatives that, particularly in motivated patients, conditions a series of behavioral rules essential for controlling obesity. (*Nutr Hosp* 2006; 21 (3): 307-312).

Cortical gamma activity during auditory tone omission provides evidence for the involvement of oscillatory activity in top-down processing

I.G. Gurtubay, M. Alegre, M. Valencia, J. Artieda

Neurophysiology Section. Clínica Universitaria. University of Navarra. Spain.

Perception is an active process in which our brains use top-down influences to modulate afferent information. To determine whether this modulation might be based on oscillatory activity, we asked seven subjects to detect a silence that appeared randomly in a rhythmic auditory sequence, counting the number of omissions ("count" task), or responding to each omission with a right index finger extension ("move" task). Despite the absence of physical stimuli, these tasks induced a 'non-phase-locked' gamma oscillation in temporal-parietal areas, providing evidence of intrinsically generated oscillatory activity during top-down processing. This oscillation is probably related to the local neural activation that takes place during the

process of stimulus detection, involving the functional comparison between the tones and the absence of stimuli as well as the auditory echoic memory processes. The amplitude of the gamma oscillations was reduced with the repetition of the tasks. Moreover, it correlated positively with the number of correctly detected omissions and negatively with the reaction time. These findings indicate that these oscillations, like others described, may be modulated by attentional processes. In summary, our findings support the active and adaptive concept of brain function that has emerged over recent years, suggesting that the match of sensory information with memory contents generates gamma oscillations. (*Exp Brain Res* 2006 Nov; 175 (3): 463-470).

Epilepsy in Children in Navarre, Spain: Epileptic Seizure Types and Epileptic Syndromes

T. Durá, M.E. Yoldi

Data for children 1 month to 15 years of age at the time of diagnosis of epilepsy were recorded from the children's hospital "Virgen del Camino" in Pamplona (Spain) from January to December 2005. International League Against Epilepsy criteria were used for diagnoses. A total of 365 children were recruited into the study. Mean age at diagnosis was 5.97 years, and time of follow-up was 4.6 years. Etiology was idiopathic in 166 (45.5%), cryptogenic in 106 (29.0%), and symptomatic in 93 (25.5%). Focal seizures were seen in 52.9% of the patients, generalized epilepsy in 43.5%,

and 3.6% were not determined. In infants, West syndrome (34.1%) and focal symptomatic seizures (24.4%) were the most prevalent syndromes. In early childhood, the main syndromes were cryptogenic focal epilepsies (17.7%) and Doose syndrome (12.8%). In school-aged children, benign epilepsies (27.3%) and absences (24.5%) were prevalent. In adolescents, cryptogenic focal epilepsies (26.6%) and benign epilepsies (23.4%). (*Journal of Child Neurology* 2007 July; 22 (7): 823-828).