BIBLIOGRAFÍA
DEL INSTRUMENTO

Cuestionario Respiratorio St. George (CRSG)

Versión española del St. George Respiratory Questionnaire (SGRQ) 1992, adaptada por M. Ferrer, J. Alonso y JM. Antó 1993:

Institut Municipal d´Investigació Mèdica (IMIM-IMAS)
Unidad de Investigación en Servicios Sanitarios
c/Doctor Aiguader, 80 E-08003 Barcelona
Tel. (+34) 93 225 75 53, Fax (+34) 93 221 40 02
www.imim.es

IMAS
Institut Municipal
d'Investigació Mèdica. IMIM

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Bibliografía de la adaptación española del SGRQ

1. M. Ferrer, J. Alonso, L. Prieto, V. Plaza, E. Monso, R. Marrades, M. C. Aguar, A. Khalaf, and J. M. Anto. Validity and reliability of the St George's Respiratory Questionnaire after adaptation to a different language and culture: the Spanish example. **European Respiratory Journal** 9:1160-1166, 1996.

2. M. Ferrer, J. Alonso, J. Morera, R. Marrades, A. Khalaf, M. C. Aguar, V. Plaza, L. Prieto, J. M. Anto, and R. M. Marrades. Chronic obstructive pulmonary disease stage and health-related quality of life. The Quality of Life of Chronic Obstructive Pulmonary Disease Study Group. **Ann Intern Med** 127 (12):1072-1079, 1997.

3. Sanjuas C, Alonso J, Prieto L, Ferrer M, Broquetas JM, Anto JM. Health-related quality of life in asthma: a comparison between the St George's Respiratory Questionnaire and the Asthma Quality of Life Questionnaire. **Qual Life Res** 2002; 11(8):729-738.

4. Ferrer M, Villasante C, Alonso J, Sobradillo V, Gabriel R, Vilagut G et al. (2002).Interpretation of quality of life scores from the St George's Respiratory Questionnaire. **European Respiratory Journal**; 19(3):405-13.

Bibliografía del desarrollo del cuestionario original

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2. Jones PW. Quality of life measurement in asthma [editorial; comment]. **European Respiratory Journal** 1995;8:885-7.

3. Quirk FH et al. Influence of demographic and disease related factors on the degree of distress associated with symptoms and restrictions on daily living due to asthma in six countries. **European Respiratory Journal** 1991;4:167-71.

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Nota: Cuestionario respiratorio St. George

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9. Okubadejo AA, Jones PW, Wedzicha JA. Quality of life in patients with chronic obstructive pulmonary disease and severe hypoxaemia. **Thorax** 1996;51:44-7.

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Bibliografía relacionada con la versión española del SGRQ

(1) Almagro P, Calbo E, Ochoa de EA, Barreiro B, Quintana S, Heredia JL et al. Mortality after hospitalization for COPD. Chest 2002;121(5):1441-1448.
Abstract: OBJECTIVES: To identify variables associated with mortality in patients admitted to the hospital for acute exacerbation of COPD. DESIGN: Prospective cohort study. SETTING: Acute-care hospital in Barcelona (Spain). PATIENTS: One hundred thirty-five consecutive patients hospitalized for acute exacerbation of COPD, between October 1996 and May 1997. MEASUREMENTS AND RESULTS: Clinical, spirometric, and gasometric variables were evaluated at the time of inclusion in the study. Socioeconomic characteristics, comorbidity, dyspnea, functional status, depression, and quality of life were analyzed. Mortality at 180 days, 1 year, and 2 years was 13.4%, 22%, and 35.6%, respectively. Sixty-four patients (47.4%) were dead at the end of the study (median follow-up duration, 838 days). Greater mortality was observed in the bivariate analysis among the oldest patients ($p < 0.0001$), women ($p < 0.01$), and unmarried patients ($p < 0.002$). Hospital admission during the previous year ($p < 0.001$), functional dependence (Katz index) [$p < 0.0004$], greater comorbidity (Charlson index) [$p < 0.0006$], depression (Yesavage Scale) [$p < 0.00001$]), quality of life (St. George's Respiratory Questionnaire [SGRQ]) [$p < 0.01$], and PCO(2) at discharge ($p < 0.03$) were also among the significant predictors of mortality. In the multivariate analysis, the activity SGRQ subscale ($p < 0.001$; odds ratio [OR], 2.62; confidence interval [CI], 1.43 to 4.78), comorbidity ($p < 0.005$; OR, 2.2; CI, 1.26 to 3.84), depression ($p < 0.004$; OR, 3.6; CI, 1.5 to 8.65), hospital readmission ($p < 0.03$; OR, 1.85; CI, 1.26 to 3.84), and marital status ($p < 0.0002$; OR, 3.12; CI, 1.73 to 5.63) were independent predictors of mortality. CONCLUSIONS: Quality of life, marital status, depressive symptoms, comorbidity, and prior hospital admission provide relevant information of prognosis in this group of COPD patients.

(2) Alonso J, Prieto L, Ferrer M, Vilagut G, Broquetas JM, Roca J et al. Testing the measurement properties of the Spanish version of the SF-36 Health Survey among male patients with chronic obstructive pulmonary disease. Quality of Life in COPD Study Group. J Clin Epidemiol 1998;51(11):1087-1094.
Abstract: The aim of this article is to evaluate the measurement properties of the Spanish version of the SF-36 Health Survey (SF-36). In total, 321 male chronic obstructive pulmonary disease (COPD) patients attending hospital outpatient or primary health clinics were cross-sectionally administered the SF-36, the St. George's Respiratory Questionnaire (SGRQ), and a dyspnea scale. A clinical measure of respiratory function, the proportion of the predicted Forced Expiratory Volume in 1 second (%FEV1) was also obtained. Internal consistency, central tendency, and dispersion statistics of scores were calculated, as well as the percentage of respondents with the highest and lowest scores for each scale and correlations between health status and clinical measures. All patients completed the SF-36 questionnaire, and less than 1% of items were missing. The proportion of patients with the worst possible score (floor effect) ranged from 0.9-20.1% among the different scales. The proportion of patients achieving the best possible score (ceiling effect) ranged from 0-61%. Cronbach's alpha coefficients were above 0.75 except for one scale (Social Functioning, alpha = 0.55). SF-36 scores were moderate to highly correlated with SGRQ scores (coefficients ranged from -.41 to -.79). Correlations were moderate to high with dyspnea and lower but statistically significant with %FEV1. A clear gradient of SF-36 scores was found according to dyspnea levels and disease staging based on %FEV1 impairment, the gradient being more marked for the Physical Functioning, Role-Physical, and General Health scales. Data presented suggest that the Spanish version of the SF-36 is acceptable, valid, and reliable in COPD patients. Although more studies are needed, this version is adequate in international comparisons of health outcomes.

(3) Casadevall EJ, Garcia RF, Diaz LS. [The approach to the quality of life in the chronic respiratory patient]. Rev Clin Esp 1993; 192(8):389-392.
Abstract: Due to the fact that the treatment in chronic respiratory patients is almost completely palliative, it is important to find some kind of scale which can yield precise information on the limitations which the subject has to face on his/her day-to-day life. Respiratory function tests and dyspnea scales are not appropriately enough systems for such purpose, therefore during the last few years several CV tests have been applied, general or specific, standardized or not. The method which currently seems more useful is CRQ, even tough SGRQ seems to be the more promising, due to the fact that it has been fully standardized and allows interindividual as well as and in interpopulation comparisons.

(4) Casanova C, Baudet JS, del V, V, Martin JM, guirre-Jaime A, Pablo de TJ et al. Increased gastro-oesophageal reflux disease in patients with severe COPD. Eur Respir J 2004; 23(6):841-845.
Abstract: The prevalence and clinical consequences of gastro-oesophageal reflux disease (GERD) in chronic obstructive pulmonary disease (COPD) are not well characterised. The present study prospectively studied 42 males with COPD (forced expiratory volume in one second % predicted: 35%, range 20-49) and 16 healthy volunteers of similar age without respiratory or gastro-oesophageal symptoms. The diagnosis of GERD was confirmed using oesophageal 24 h pH monitoring. In the current study group, reflux symptoms were measured using the Vigneri score, cough and dyspnoea with the modified Medical Research Council questionnaire, and pulmonary function with bronchodilator response and health status using St George's Respiratory Questionnaire. Pathological reflux was documented in 26 out of 42 patients (62%) and in three volunteers (19%). In patients with GERD, 15 patients (58%) did not report any reflux symptoms. There were no differences in symptoms, health status, bronchodilator treatment and pulmonary function test between patients with and without GERD. Oxygen desaturation coincided with episodes of increased oesophageal acidity in 40% of patients with GERD. Patients with severe chronic obstructive pulmonary disease have a high prevalence of asymptomatic gastro-oesophageal reflux. The association between this reflux and oxygen desaturation deserves further attention.

(5) de Miguel DJ, Izquierdo Alonso JL, Rodriguez Gonzalez-Moro JM, de Lucas RP, Bellon Cano JM, Molina PJ. [Quality of life with chronic obstructive pulmonary disease: the influence of level of patient care]. Arch Bronconeumol 2004; 40(10):431-437.
Abstract: OBJECTIVE: The aim of the study was to determine the factors related to the health-related quality of life (HRQL) of patients with stable chronic obstructive pulmonary disease (COPD) and to assess the degree of influence of level of patient care (primary or specialized). MATERIAL AND METHOD: An observational descriptive, cross-sectional, multicenter study was carried out. The study sample was a randomized selection taken from a stratified sample of patients treated by primary care physicians and pneumologists from each Spanish region. Only those patients whose level of health care was indicated and whose diagnosis of COPD was confirmed by spirometry were enrolled in the study. RESULTS: Five hundred sixty patients were assessed, 100 from primary health care and 460 from pneumology practices. No significant differences between the 2 levels of care were found in the scores on the HRQL questionnaire (Spanish version of the St George's Respiratory Questionnaire). There was a weak correlation between patients' perception of health and lung function parameters. Factors related to HRQL in the multivariate analysis were dyspnea, the presence of COPD exacerbations in the previous year, consequent visits to the emergency department, age, and degree of airflow restriction, but not level of patient care. CONCLUSIONS: Stable COPD patients' HRQL is not related to their level of care, be it primary or specialized, but is related to other factors such as dyspnea, presence of exacerbations or consequent visits to the emergency department, age, and degree of airflow restriction.

(6) Domingo-Salvany A, Lamarca R, Ferrer M, Garcia-Aymerich J, Alonso J, Felez M et al. Health-related quality of life and mortality in male patients with chronic obstructive pulmonary disease. Am J Respir Crit Care Med 2002; 166(5):680-685.
Abstract: To assess whether generic and specific health-related quality of life (HRQL) are independently associated with total and specific mortality in patients with chronic obstructive pulmonary disease (COPD), we followed until 1999 a cohort of 321 male patients with COPD, recruited in 1993-1994 at outpatient respiratory clinics. Baseline characteristics recorded under stable clinical conditions included forced spirometry, arterial blood gas tensions, dyspnea scales, 11 comorbid conditions, St. George's Respiratory Questionnaire (SGRQ), and SF-36 Health Survey. Vital status was assessed through reinterviews, the Mortality Register, and clinical records. Subjects who died (106) were older (69.8 versus 62.5 years) ($p < 0.001$), had lower body mass index (BMI) (25.4 versus 27.1) ($p < 0.01$), were more impaired in the clinical characteristics studied (%FEV(1), 34.0 versus 51.0) ($p < 0.001$), and had long-term oxygen therapy more frequently (31% versus 7%) ($p < 0.001$). Survival was shorter when worse HRQL was reported. SGRQ total and SF-36 physical summary scores were independently associated with total and respiratory mortality in Cox models, including age, FEV(1), and BMI. The total mortality-standardized hazard ratios for both HRQL measures were 1.3, whereas those for FEV(1) were 1.6. HRQL measures provide independent and relevant information on the health status of male patients with COPD. Their use should be considered for a more thorough evaluation and staging of patients with COPD.

(7) Fernandez A, Bujalance M, Leiva F, Martos F, Garcia A, Padros D. Correlation between subjective and objective measures of health in patients with chronic obstructive pulmonary disease (COPD). Aten Primaria 2001; 28(9):579-589.
Abstract: Objetivos. Analizar la relación entre medidas de salud objetivas (espirometría actual) y medidas de salud subjetivas (calidad de vida autopercibida). Evaluar la correlación entre 2 cuestionarios de valoración de calidad de vida. Diseño. Descriptivo, transversal.
Emplazamiento. Dos centros de salud urbanos con programa de crónicos (subprograma de enfermedad pulmonar obstructiva crónica [EPOC]).
Participantes. Un total de 278 pacientes diagnosticados de EPOC.
Mediciones principales. Mediante entrevista personal se analizan las siguientes variables: calidad de vida autopercibida (perfil de salud de Nottingham; cuestionario respiratorio St. George; rangos de puntuación de subescalas 0-100 puntos; perfil sociodemográfico, diagnóstico de EPOC, antecedentes personales, espirometría actual.
Resultados. Edad, 66,9 ± 8,9 años; género, 88% varones. Los principales resultados de salud autopercibida fueron (medias e IC del 95%): perfil de salud de Nottingham: subescalas de energía, 40 (35,6-44,4); dolor, 35,9 (32,3-39,5); emotividad, 32,5 (29,4-38,6); sueño, 41,9 (37,8-45,9); social, 15,3 (12,7-17,9); movilidad, 36,7 (33,9-39,5), y total, 33,4 (30,8-36). Cuestionario de St. George: subescalas de impacto, 38,01 (35,08-40,18); actividad, 53,8 (50,2-57,4) síntoma, 37,7 (35,2-40,3) y total, 40,9 (38,6-43,2). Los coeficientes de correlación entre ambos cuestionarios oscilaron entre 0,12 (para las dimensiones sueño y síntoma; $p = 0,03$) y 0,66 (entre las dimensiones de movilidad y actividad; $p < 0,0001$). Existe una relación lineal de tendencia positiva entre ambos cuestionarios y las categorías de valores (normal, leve, moderado y grave) del parámetro espirométrico, volumen espiratorio máximo en el primer segundo ($p < 0,0001$).
Conclusiones. Encontramos una buena correlación entre ambos cuestionarios de salud autopercibida, siendo de mayor especificidad para patología respiratoria el St. George. Existe una correlación leve-moderada entre las medidas de salud objetivas y subjetivas en los pacientes con EPOC en nuestro medio.

(8) Ferrer M, Alonso J, Anto JM. The spanish version of the St. George's Respiratory Questionnaire: adaptation and preliminary validity. Eur Respir J 1995; 8:54S.

(9) Ferrer M, Alonso J, Anto JM. Quality of life in COPD patients of different stages of the disease. Eur Respir J 1995; 8:354s.

(10) Ferrer M. Calidad de vida relacionada con la salud en los diferentes estadios de la enfermedad pulmonar obstructiva cronica. Universidad Autónoma de Barcelona, 1997.
Abstract: El objetivo principal del estudio de la 'Calidad de vida relacionada con la salud en los diferentes estadios de la enfermedad pulmonar obstructiva crónica' era evaluar la relación entre la clasificación en estadios de gravedad de la enfermedad pulmonar obstructiva crónica (EPOC) propuesta por la American Thoracic Society y la calidad de vida relacionada con la salud (CVRS), y el efecto de la comorbilidad declarada en la CVRS. Se realizó la evaluación de 321 pacientes varones con EPOC reclutados en consultas externas de Neumología de cuatro hospitales y un centro de atención primaria. Los pacientes completaron la versión española de 2 dos cuestionarios genéricos de CVRS, el Perfil de Salud de Nottingham y el Cuestionario SF-36 y un cuestionario específico para enfermos respiratorios, el Cuestionario Respiratorio St. George. Se realizó una espirometría forzada a todos los participantes dentro del período comprendido entre los dos meses anteriores o posteriores a la entrevista. El estudio de validez de la versión española del SGRQ demostró que esta nueva versión adaptada es aceptable, facil de contestar y conceptualmente equivalente al cuestionario original, por lo que puede utilizarse en estudios nacionales e internacionales. Las puntuaciones del Cuestionario St. George presentaron correlaciones entre moderadas y altas con la clasificación en estadios de gravedad (r de Spearman entre 0.27 y 0.51). Los pacientes con estadio I presentaron puntuaciones del Cuestionario Respiratorio St. George sustancialmente más elevadas (peores) que los valores de referencia (6 y 34; p<0.001), indicando que, contrariamente a lo esperado, incluso los pacientes con estadios más leves presentan un deterioro importante de la CVRS. El 84% de los pacientes declaró padecer al menos un trastorno crónico concomitante. La comorbilidad tiene un efecto aditivo en el deterioro de la CVRS, aunque este efecto influye sólo parcialmente en el patrón de deterioro de la CVRS paralelo al empeoramiento del estadio de gravedad observado. En conclusión, la clasificación en estadios de gravedad propuesta por la American Thoracic Society divide a los pacientes con EPOC en tres grupos que presentan una afectación diferente de la CVRS.

(11) Ferrer M, Alonso J, Prieto L, Plaza V, Monso E, Marrades R et al. Validity and reliability of the St George's Respiratory Questionnaire after adaptation to a different language and culture: the Spanish example. Eur Respir J 1996; 9(6):1160-1166.
Abstract: We describe the adaptation into Spanish of the St George's Respiratory Questionnaire (SGRQ), a self-administered questionnaire developed by Jones et al. (1991) covering three domains of health in airways disease patients: symptoms, activity and impacts. For the adaptation, the forward and back-translation method by bilinguals was used, together with professional committee and lay panel. Once tested for feasibility and comprehension, 318 male chronic obstructive pulmonary disease (COPD) patients with a wide range of disease severity completed the Spanish version of the SGRQ. The clinical status of the patients was evaluated concurrently with the measurement of health status. Lung function was assessed in the 2 months before or after the questionnaire administration. The Spanish version of the SGRQ was acceptable and easy to understand. Cronbach's alpha reliability coefficient was 0.94 for the overall scale and 0.72 for "Symptoms", 0.89 for "Activity", and 0.89 for "Impacts" subscales. Correlation coefficients between the overall score and dyspnoea and % forced expiratory volume in one second (FEV1) were 0.59 and -0.45, respectively, and these correlations were higher than those observed between the clinical variables and the Nottingham Health Profile, a generic measure of health-related quality of life. Results of the study suggest that the Spanish version of the SGRQ is conceptually equivalent to the original, and similarly reliable and valid. Although further studies should complete the adaptation work, results suggest that the SGRQ may already be used in Spain and in international studies involving Spanish respiratory patients. According to the present approach, it appears to be feasible to adapt a specific questionnaire on health-related quality of life in respiratory disease to another language and culture.

(12) Ferrer M, Alonso J, Morera J, Marrades RM, Khalaf A, Aguar MC et al. Chronic obstructive pulmonary disease stage and health-related quality of life. The Quality of Life of Chronic Obstructive Pulmonary Disease Study Group. Ann Intern Med 1997; 127(12):1072-1079.
Abstract: BACKGROUND: The American Thoracic Society recently recommended that chronic obstructive pulmonary disease be staged on the basis of the percentage of predicted FEV1. OBJECTIVE: To examine 1) the relation between the american Thoracic Society system for staging chronic obstructive pulmonary disease and health-related quality of life and 2) the effect of self-reported comorbid conditions on health-related quality of life. DESIGN: Cross-sectional study. SETTING: Outpatient clinics of respiratory departments of four hospitals and one primary health care center in spain. PATIENTS: 321 consecutive male patients with chronic obstructive pulmonary disease. MEASUREMENTS: Functional respiratory impairment, FEV1, respiratory symptoms, and health-related quality of life. Respiratory symptoms and health-related quality of life were measured by using the Spanish version of the St. George's Respiratory Questionnaire and the Nottingham Health Profile. RESULTS: Patient scores on the St. George's Respiratory Questionnaire were moderately to strongly associated with disease staging (r = 0.27 to 0.51). Compared with reference values, values for health-related quality of life for patients with stage I disease were substantially higher on the St. George's Respiratory Questionnaire (6 and 34; p < 0.001) and values for impairment were significantly greater in stage 1 patients with comorbid conditions (19 and 36; P = 0.001). At least one concomitant chronic condition was found in 84% of study patients. Comorbid conditions only partly influenced the observed pattern of deterioration of health-related quality of life with worsening stages of disease. CONCLUSION: Staging criteria for chronic obstructive pulmonary disease based on percentage of predicted FEV1 separated groups of patients with varying degrees of impairment in health-related quality of life. Contrary to expectations, even patients with mild disease showed substantially compromised health-related quality of life. Comorbid conditions influenced the relation between chronic obstructive pulmonary disease and health-related quality of life.

(13) Ferrer M, Villasante C, Alonso J, Sobradillo V, Gabriel R, Vilagut G et al. Interpretation of quality of life scores from the St George's Respiratory Questionnaire. Eur Respir J 2002; 19(3):405-413.
Abstract: The aim of the study was to obtain the general population norms for the St. George's Respiratory Questionnaire (SGRQ), a specific questionnaire for respiratory diseases. The IBERPOC project was a cross-sectional study of representative samples of the general population aged between 40-69 yrs. The study sample was composed of 862 individuals. All participants considered as "probable cases" of chronic obstructive pulmonary disease (COPD) (n=460) were eligible to complete the SGRQ and among the rest of the nonprobable COPD participants (n=3,571), 10 individuals from each defined age and sex group were eligible (n=402). Weights were applied to restore general population representativity of the sample. Mean forced expiratory volume in one second (FEV1) predicted was 89.4% (SD=16.5%; range: 16-131%). Chronbach's alpha coefficients were >0.7 in the symptoms, activity and impact scales, and >0.9 in the overall scale. Symptom scale score was significantly higher among males (11.6 versus 7.8; p<0.01) and activity scale score was significantly higher among females (12.2 versus 14.6; p=0.04). In a multiple linear regression model, respiratory diseases (asthma and COPD) and FEV1 % over pred showed the strongest association with the SGRQ total score. Smoking, sex, age and education were independently associated with the total SGRQ score. These results indicate that individuals from the general population presented some of the problems that are important when measuring health-related quality of life in respiratory patients, and provide St George's Respiratory Questionnaire norms, a useful method for interpreting the St George's Respiratory Questionnaire score in a given patient or study samples.

(14) Hernandez C, Casas A, Escarrabill J, Alonso J, Puig-Junoy J, Farrero E et al. Home hospitalisation of exacerbated chronic obstructive pulmonary disease patients. Eur Respir J 2003; 21(1):58-67.
Abstract: It was postulated that home hospitalisation (HH) of selected chronic obstructive pulmonary disease (COPD) exacerbations admitted at the emergency room (ER) could facilitate a better outcome than conventional hospitalisation. To this end, 222 COPD patients (3.2% female; 71+/-10 yrs (mean+/-SD)) were randomly assigned to HH (n=121) or conventional care (n=101). During HH, integrated care was delivered by a specialised nurse with the patient's free-phone access to the nurse ensured for an 8-week follow-up period. Mortality (HH: 4.1%; controls: 6.9%) and hospital readmissions (HH: 0.24+/-0.57 controls: 0.38+/-0.70) were similar in both groups. However, at the end of the follow-up period, HH patients showed: 1) a lower rate of ER visits (0.13+/-0.43 versus 0.31+/-0.62); and 2) a noticeable improvement of quality of life (delta St George's Respiratory Questionnaire (SGRQ), -6.9 versus -2.4). Furthermore, a higher percentage of patients had a better knowledge of the disease (58% versus 27%), a better self-management of their condition (81% versus 48%), and the patient's satisfaction was greater. The average overall direct cost per HH patient was 62% of the costs of conventional care, essentially due to fewer days of inpatient hospitalisation (1.7+/-2.3 versus 4.2+/-4.1 days). A comprehensive home care intervention in selected chronic obstructive pulmonary disease exacerbations appears as cost effective. The home hospitalisation intervention generates better outcomes at lower costs than conventional care.

(15) Hernández C, Abrey J, Jimenez A, Fernandez R, Martin C. Función pulmonar y calidad de vida en relación con la colonización bronquial en adultos con bronquiectasias no debidas a fibrosis quística. Med Clin (Barc) 2002; 118(4):130-134.
Abstract: Fundamento: Comparar la función pulmonar y la calidad de vida en pacientes con bronquiectasias no debidas a fibrosis quística (FQ) en función de que se encuentren colonizados (por Pseudomonas o por otros gérmenes) o no colonizados.
Pacientes y método: Estudio de casos y controles no aleatorio y prospectivo en pacientes con bronquiectasias que acudieron a la consulta de Neumología del Hospital Universitario de Canarias entre enero de 1999 y diciembre de 2000 en fase de estabilidad clínica y sin tratamiento antibiótico al menos 6 semanas antes. Se excluyeron los pacientes con FQ y reagudizaciones respiratorias durante el estudio. Se recogieron dos muestras de esputo para cultivo con 6 semanas de diferencia y se determinaron el volumen espiratorio forzado en el primer segundo (FEV_1), la capacidad vital forzada (FVC) y los gases arteriales. Además se valoró la calidad de vida mediante el Cuestionario Respiratorio de St. George. Las variables principales fueron FEV_1, FVC, pO_2 y calidad de vida. Estadística: análisis de la variancia de un factor independiente y prueba de la t de Student.
Resultados: Se incluyeron 70 pacientes, 25 varones (35%) y 45 mujeres (64%), con una media (DE) de edad de 56 (17) años. Catorce pacientes estaban colonizados por Pseudomonas (grupo Ps), 10 por otros gérmenes (grupo otros) y 46 no estaban colonizados (grupo no). La función pulmonar del grupo no (FEV_1%: 73 [24] y FVC%: 79 [21]) fue mejor que la del grupo Ps (FEV_1%: 47 [27]; p = 0,00; FVC%: 61 [28]; p = 0,04). La calidad de vida en el grupo no (puntuación total [PT]: 33,2 [18,9]) fue mejor que en el grupo Ps (PT: 54,3 [23,2]; p = 0,00) y que en el grupo otros gérmenes distintos de Pseudomonas (PT: 52,2 [20,4]; p = 0,02).
Conclusiones: Los pacientes con bronquiectasias colonizados por Pseudomonas tienen peor función pulmonar y calidad de vida que los no colonizados. Los colonizados por gérmenes distintos de Pseudomonas tienen peor calidad de vida que los no colonizados.

(16) Jones PW, Quirk FH, Baveystock CM. The St George's Respiratory Questionnaire. Respir Med 1991; 85 Suppl B:25-31.
Abstract: The St George's Respiratory Questionnaire is a standardized self-completed questionnaire for measuring impaired health and perceived well-being ('quality of life') in airways disease. It has been designed to allow comparative measurements of health between patient populations and quantify changes in health following therapy. The background and rationale for its development are discussed together with an analysis of its performance.

(17) Miravitlles M, varez-Sala JL, Lamarca R, Ferrer M, Masa F, Verea H et al. Treatment and quality of life in patients with chronic obstructive pulmonary disease. Qual Life Res 2002; 11(4):329-338.
Abstract: Treatments administered to patients with chronic obstructive pulmonary disease (COPD), especially when used in multiple combinations, are not free of interactions and side effects that can potentially impair health-related quality of life (HRQL). We studied HRQL and its relationship with treatment in a group of 441 patients with stage II or III COPD (age: 66.6 (SD: 8.3) years; FEV1: 32.4% (SD: 8.1%)) using the St George's Respiratory Questionnaire (SGRQ) and the 12-item short form (SF-12) Health Survey. The most prescribed drugs were ipratropium bromide (87.5%), inhaled corticosteroids (69.4%) and short-acting beta-2 agonists (64.9%). Patients with stage III of the disease were receiving more drugs, particularly short-acting beta-2 agonists (p = 0.002) and inhaled corticosteroids (p = 0.031). The use of theophyllines was associated with a worse total SGRQ score (beta = 4.49; p < 0.001), although this negative association decreased with advanced age. A trend towards worse SGRQ scores was observed with the use of high doses of long-acting beta-2 agonists (beta = 3.22; p = 0.072). Patients receiving three drugs or more presented worse total SGRQ scores than patients receiving fewer drugs (beta = 6.1, p < 0.001; and beta = 7.64, p < 0.001, respectively). These findings suggest that the use of multiple drugs in the treatment of patients with COPD is associated with worse total SGRQ scores. The effect of drugs, their dosages and associations with other drugs on HRQL merit further research.

(18) Miravitlles M, Ferrer M, Pont A, Zalacain R, varez-Sala JL, Masa F et al. Effect of exacerbations on quality of life in patients with chronic obstructive pulmonary disease: a 2 year follow up study. Thorax 2004; 59(5):387-395.
Abstract: BACKGROUND: A study was undertaken to evaluate exacerbations and their impact on the health related quality of life (HRQL) of patients with chronic obstructive pulmonary disease (COPD). METHODS: A 2 year follow up study was performed in 336 patients with COPD of mean (SD) age 66 (8.2) years and mean (SD) forced expiratory volume in 1 second (FEV(1)) 33 (8)% predicted. Spirometric tests, questions regarding exacerbations of COPD, and HRQL measurements (St George's Respiratory Questionnaire (SGRQ) and SF-12 Health Survey) were conducted at 6 month intervals. RESULTS: A total of 1015 exacerbations were recorded, and 103 (30.7%) patients required at least one hospital admission during the study. After adjustment for baseline characteristics and season of assessment, frequent exacerbations had a negative effect on HRQL in patients with moderate COPD (FEV(1) 35-50% predicted); the change in SGRQ total score of moderate patients with > or =3 exacerbations was almost two points per year greater (worse) than those with <3 exacerbations during the follow up (p = 0.042). For patients with severe COPD (FEV(1) <35% predicted) exacerbations had no effect on HRQL. The change in SGRQ total score of patients admitted to hospital was almost 2 points per year greater (worse) than patients not admitted, but this effect failed to show statistical significance in any severity group. There was a significant and independent seasonal effect on HRQL since SGRQ total scores were, on average, 3 points better in measurements performed in spring/summer than in those measured in the winter (p<0.001). CONCLUSIONS: Frequent exacerbations significantly impair HRQL of patients with moderate COPD. A significant and independent effect of seasonality was also observed.

(19) Monso E, Rosell A, Bonet G, Manterola JM, Matas L, Ruiz J et al. [The impact of bronchial colonization in the quality of life of patients with chronic, stable bronchitis]. Med Clin (Barc) 1998; 111(15):561-564.
Abstract: BACKGROUND: The aim of this study was to determine the impact of respiratory function and bacterial colonization of the lower airway on the quality of life of patients with chronic, stable bronchitis (CB). MATERIALS AND METHODS: A series of 41 patients with stable CB was studied (age: 63.8; standard deviation (SD) 9.1 years; FVC% 91.0 (18.9); FEV1% 74.6 (23.7); FEV1/FEC 62.8 (11.2) with normal thoracic radiography. Patients with previous diagnosis of bronchiectasia, bronchial asthma and/or positive bronchodilatory tests (> 15%) were not included in the study. Bacterial growth in a sputum sample of grade 4-5 of the Murray-Washington scale was considered diagnostic of bronchial colonization. Measurement of the quality of life was performed with the Nottingham Health Profile (NHP) and the St. George Respiratory Questionnaire (SGRQ). RESULTS: The patients presented a moderate alteration in their quality of life with scores over 25 in most of the dimensions of the NHP and the SGRQ. In 9 out of 41 cases (22%), the sputum cultures demonstrated bronchial colonization with the most frequently isolated bacterias being Haemophilus influenzae and Moraxella catarrhalis. Multivariate analysis performed with the quality of life as the dependent variable showed an association between FEV1/FEC1 and the SGRQ score (R2 = 0.18), and energy (R2 = 0.09) and physical mobility (R2 = 0.05) of NHP. CONCLUSIONS: Bronchial obstruction is the main determinant in the quality of life in patients with stable CB. Colonization of the lower airway is observed in 22% of the patients and also influences the quality of life of the patients but to a much lesser extent.

(20) Plaza V, Serra-Batlles J, Ferrer M, Morejon E. Quality of life and economic features in elderly asthmatics. Respiration 2000; 67(1):65-70.
Abstract: BACKGROUND: In the geriatric population, asthma tends to be overlooked. Moreover, typical symptoms of asthma may mimic chronic bronchitis and emphysema. OBJECTIVE: To compare the characteristics of asthma between elderly (>/=65 years) and adult (<65 years) asthma patients with regard to asthma severity, health-related quality of life, and direct expenditures for medical care generated by the disease. METHODS: A cross-sectional study was made in the asthmatic population older than 14 years in the area of Barcelona, Spain. Asthma severity was determined according to the International Consensus criteria of 1992. St. George's Respiratory Questionnaire (SGRQ) was used to measure the quality of life. Direct costs were calculated registering all costs generated by each patient per year. RESULTS: The study population consisted of 282 adult asthmatics and 51 elderly asthmatics. Asthma was more severe in the elderly group (mild 10%, moderate 35%, severe 55%) than in the adult group (mild 47%, moderate 35%, severe 18%). Elderly asthmatics had significantly higher total SGRQ scores (48 vs. 35, p < 0.001) than adult asthmatics, as well as significantly higher scores for all subscales. Asthma-derived direct costs in elderly asthmatics (mean USD 1,490 vs. USD 773) were double those in adult asthmatics, mainly due to higher costs of hospitalization and medication in the elderly. CONCLUSIONS: Asthma in elderly people as compared with asthma in adulthood was more severe and was associated with a worse health-related quality of life, and significantly higher expenditures for medical care.

(21) Quirk FH, Jones PW. Patient's perception of distress due to symptoms and effects of asthma on daily living and an investigation of possible influential factors. Clin Sci 1990; 79:17-21.

(22) Sanchez S L. Impacto asistencial y perfil clinico del paciente con enfermedad pulmonar obstruida cronica de alto consumo sanitario. Universidad de Valencia, 2000.
Abstract: Objetivos: Principal: identificar los factores asociados a la utilizacion frecuente de servicios hospitalarios (urgencias e ingresos) en una poblacion diana de pacientes con enfermedad pulmonar obstructiva cronica de alto consumo sanitario (EPOC-AC). Secundarios: evaluar el impacto asintencial que produce la EPOC en nuestro hospital, identificar a los pacientes con EPOC-AC y conocer su carga asistencial, su perfil general y la supervivencia tras dos años de seguimiento. Metodo: El estudio consta de 2 fases. 1ª fase: se han revisado de forma retrospectiva todos los pacientes con EPOC controlados en nuestro centro durante 1998, evaluando la edad, genero, tabaquismo, espirometria, gasometria arterial, numero de hospitalizaciones y de visitas a urgencias. Los pacientes fueron seguidos durante 2 años. 2ª fase, se ha realizado un estudio prospectivo sobre 64 pacientes, 32 casos con EPOC-AC y 32 controles. Se definió EPOC-AC como aquel paciente que hubiese precisado durante un año: 1) dos o mas hospitalizacones; 2) tres o mas asistencias en urgencias ó 3) un ingreso y 2 urgencias. Como controles se eligio a pacientes con EPOC de similar edad, FEV1 y paO2,que no hubiesen precisado atencion hospitalaria. Se recogieron diversos datos clinicos, nivel socioeconomico, ansiedad (evaluada con el cuestionario STAI-E/R), calidad de vida relacionada con la salud [medida con el St´George Respiratory Questionnaire (SGRQ)], parametros nutricionales y diversos aspectos terapeuticos. Asimismo, en todos los casos se realizo espirometria, gasometria arterial, presiones estaticas maximas y prueba de marcha durante 6 minutos.
Resultados: Se incluyen 320 casos con una edad media de 71+-9 años. Ciento veintieis casos (39,4%) generaron 263 visitas a urgencias durante 1998, lo que supone el 1,1% del total de urgencias atendidas en nuestro centro (n=23750). Noventa y dos casos (28,7%) ingresaron por exacerbacion de su EPOC, generando el 9,6% del total de admisiones en el Servicio de Medicina Interna(n=1309). Los pacientes con EPOC-AC fueron 39(12,2%) produciendo 160(60,8%) urgencias y 75(57,1%) ingresos. Estos enfermos presentaron valores mas bajos del FEV1, FVC y paO2, siendo la edad superior. La mortalidad de este grupo fue del 36,1% a los 2 años significativamente superior a la de los enfermos que no precisaron atencion hospitalaria (13,7%). Tras aplicar un modelo de regresion logistica, las variables que finalmente demostraron ser predictoras independientes de alta demanda hospitalaria fueron el tratamiento con salmeterol, la presencia de arritmias cardiacas y una mayor puntuacion en el SGRQ.
Conclusiones: La EPOC es una enfermedad que genera una fuerta demanda hospitalaria. Cerca del 60% de estas visitas son producidas por un grupo reducido (12,2%) de pacientes con alto consumo que presentan en lineas generales un perfil de mayor gravedad. Aunque no podemos descartar un sesgo de gravedad en relacion a la presencia de B2-agonistas de accion prolongada en la ecuacion final de regresion, las variables que se asocian en nuestra muestra a una mayor utilizacion de servicios hospitalarios son la utilizacion regular del salmeterol inhalado, la presencia de arritmias cardiacas y la existencia de una peor calidad de vida relacionada con la salud.

(23) Sanjuas C, Alonso J, Ferrer M, Curull V, Broquetas JM, Anto JM. Adaptation of the Asthma Quality of Life Questionnaire to a second language preserves its critical properties: the Spanish version. J Clin Epidemiol 2001; 54(2):182-189.
Abstract: To test the metric proprieties of the Spanish version of the Juniper Asthma Quality of Life Questionnaire (AQLQ), we studied 116 adult asthmatic patients with a wide range of disease severity (53 patients were recruited from the respiratory outpatient department, 38 from a primary health care centre and 25 were patients admitted into hospital due to acute asthma). The patients were assessed twice, at recruitment and after 2 months. The AQLQ showed a high internal consistency (Cronbach's alpha = 0.78 to 0.96) and a high 2-week reproducibility (ICC = 0.82 to 0.92). Expected significant differences in AQLQ scores were observed according to disease severity as measured by symptoms, medication, use of services and recruitment setting. The cross-sectional and longitudinal correlations between AQLQ and the overall St. George's Respiratory Questionnaire were strong, moderate to strong between AQLQ and dyspnea and weak to moderate between AQLQ and FEV(1). The changes in AQLQ scores were significantly different in patients who either improved or deteriorated from those patients who remained stable (P <.0001 and P <.01, respectively, for the overall AQLQ). We conclude that the Spanish version of the AQLQ is reliable, valid and sensitive to changes.

(24) Sanjuas C, Alonso J, Prieto L, Ferrer M, Broquetas JM, Anto JM. Health-related quality of life in asthma: a comparison between the St George's Respiratory Questionnaire and the Asthma Quality of Life Questionnaire. Qual Life Res 2002; 11(8):729-738.
Abstract: The aim of the study is to compare the performance of the Juniper Asthma Quality of Life Questionnaire (AQLQ) and the St George's Respiratory Questionnaire (SGRQ) in a sample of asthmatic patients, representative of a broad spectrum of asthma severity. We studied 116 patients with a mean age (SD) of 42.6 (18.3) year. Patients were assessed twice, at recruitment and after 2 months, to determine the reliability, validity and responsiveness of the AQLQ and the SGRQ. Both questionnaires showed good reliability coefficients (> or = 0.70) which reached the standards for comparison at individual level (> or = 0.90) in the case of activity, impacts and overall SGRQ scores as well as symptoms, activities and overall AQLQ scores. Both AQLQ and SGRQ were able to discriminate among groups of patients based on asthma severity and control and showed, except for the symptoms domain of the SGRQ, large (standardized response means >0.8) and significant changes in the group of patients that improved at follow-up. We conclude that the AQLQ and SGRQ have shown high reliability and validity and, with the exception of the SGRQ symptoms, a high level of responsiveness. In overall terms, not one of these instruments seems to behave better than the other.

(25) Soler JJ, Sanchez L, Roman P, Martinez MA, Perpina M. Risk factors of emergency care and admissions in COPD patients with high consumption of health resources. Respir Med 2004; 98(4):318-329.
Abstract: This study is a case-control study looking to identify factors associated with frequent use of hospital services (emergency care and admissions) in COPD patients. Data from 64 patients with moderate-severe COPD (FEV1/FVC < or = 70, FEV1 < or = 50%) were prospectively collected, 32 cases with high consumption of health resources (COPD-HC) and 32 controls. COPD-HC was defined as a patient diagnosed of COPD requiring during one year: (1) two or more hospitalizations; (2) three or more emergency visits; or (3) one admission and two emergency visits. Patients with COPD and a similar age, FEV1 and PaO2 who required no hospital care during the study year (1998) were randomly selected as controls. Demographic, clinical and socioeconomic data were collected from each subject, and evaluations were made of anxiety, health-related quality of life [measured with the St. George's Respiratory Questionnaire (SGRQ)], nutritional parameters, and different therapeutic aspects. Forced spirometry, resting arterial blood gases, maximal respiratory muscle pressures and a 6-min walking test were measured in all cases. After applying a logistic regression model, the variables that finally proved to be independent predictors of frequent use of hospital services were: treatment with salmeterol, the presence of cardiac arrhythmias, and increased SGRQ scores. The administration of inhaled salmeterol multiplied the risk of having COPD-HC criteria by 27.4 (95%CI: 2.4-308.1), while the presence of arrhythmias multiplied the probability of meeting high consumption criteria by 24.3 (95%CI: 1.7-340.1). For each point of worsened quality of life, the risk of hospital care increased 1.06-fold (95%CI: 1.01-1.10). Although a severity bias related to the presence of long-acting beta2-agonists in the final regression equation cannot be ruled out, the variables associated in our sample to an increased utilization of hospital services are the regular use of inhaled salmeterol, the presence of cardiac arrhythmias, and an impaired health-related quality of life. The use of specific strategies aimed at modulating these aspects could, at least in theory, reduce the number of exacerbations requiring hospital care, with the resultant individual and collective benefits derived.

(26) Vega R J. Aportación a la evaluación pronóstica de pacientes con EPOC y morbilidad asociada. Universidad de Córdoba, 2001.
Abstract: Los distintos estadios evolutivos de la enfermedad pulmonar obstructiva crónica (EPOC), se han venido clasificando mediante la espirometría (FEV1), lo cual no siempre orienta sobre el pronóstico a corto plazo. Este trabajo trata de identificar las variables de significado pronóstico a corto plazo, determinado por los reingresos y por las consultas a urgencias del hospital. De los pacientes ingresados en el Servicio de Medicina Interna I del Hospital Reina Sofía por una reagudización, un total de fueron seguidos un año tras el alta. Se aplicó un diseño de cohorte prospectivo y un análisis de regresión logística para la variable dependiente reingreso y una regresión lineal múltiple para la variable consultas a urgencias del hospital. En el modelo de reingreso (si/no) se incluyeron: puntuación en la escala de actividad del Sant George's Respiratory Questionary (SGRQ) y el tratamiento con oxigenoterapia crónica domiciliaria (OCD). En el modelo de consultas a urgencias solo quedó incluida la escala de actividad del SGRQ. Podemos concluir que la puntuación del SGRQ y la OCD, predicen el reingreso y el número de consultas a urgencias tras un año mejor que el FEV1.

(27) Vega Reyes JA, Montero Perez-Barquero M, Sanchez GP. [Assessing COPD-associated morbidity: factors of prognosis]. Med Clin (Barc) 2004; 122(8):293-297.
Abstract: BACKGROUND AND OBJECTIVE: Forced respiratory volume in first second spirometry is currently used to diagnose chronic obstructive pulmonary disease. However, this technique does not always provide a reliable short-term prognosis, especially in patients with associated morbidity. We propose that specific health-related quality of life questionnaires are a better tool to estimate the prognosis of chronic obstructive pulmonary disease. PATIENTS AND METHOD: A total of 93 patients who had been admitted to Unit 1 of the Department of Internal Medicine at the Reina Sofia Hospital for chronic obstructive pulmonary disease exacerbation were followed up for one year after discharge. The number of hospital readmissions were recorded. A prospective cohort design and logistic regression analysis were used. RESULTS: Mean age was 70.8, 83% were males, 89.2% presented with an associated illness, and 59.1% had been hospitalized previously. The mean forced respiratory volume in first second was 34% and the overall score for the St George's Respiratory Questionnaire was 58.2. After one year, 40.4% of patients were readmitted to hospital. The regression model included scores for the St George's Respiratory Questionnaire activity scale (OR 1.05) and long-term home oxygen therapy (OR 5.18). CONCLUSIONS: The St George's Respiratory Questionnaire score better predicts hospital readmission after one year than the forced respiratory volume in first second. The activity scale is the best predictor of readmission. Long-term home oxygen therapy is associated with an increase in the number of hospitalizations.