Severity of pain (BPI-item-3) was statistically associated with total annual health costs: €1235 (932), €1473 (1198) and €1950 (1391) for mild, moderate and severe pain respectively, p = 0.017. Walking (FIQ1g) and work/domestic (BPI5d) interference were positive predictors for per patient annual drug costs, while pain problems and 12-month health state change (EQ-5D items 4 and 6) were negative predictors (R2 = 0.283, p < 0.001).

CONCLUSION: In the primary care setting, annual per patient total direct health cost of Fibromyalgia showed weak but statistically significant association with patient disease interference and severity of pain. Less drug costs could be associated with poorer outcomes in terms of health state change and level of pain.

**OBESITY—Clinical Outcomes Studies**

**IMPACT OF OBESITY UPON COSTS AND ANTIPSYCHOTIC DRUG USE IN THE ADULT POPULATION SEEN IN SPANISH PRIMARY CARE CENTERS**

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OBJECTIVES: To describe the association between obesity and costs and use of antipsychotic drugs (APDs) in patients seen by seven Spanish primary care teams (PCTs), under usual medical practice. METHODS: A retrospective, multicenter study was made with patients receiving APD treatment during year 2005. Obesity was considered according to W.H.O. as a body mass index (BMI) > 30 kg/m2. Main measurements included APD consumption, sociodemographics, comorbidity/episodes, Charlson index (severity), and costs (semi-fixed and variable, visits, diagnostic/therapeutic procedures, referrals and drugs). Descriptive statistics, logistic regression model and analysis of covariance (ANCOVA) with Bonferroni correction were applied.

RESULTS: A total of 42,437 patients (age: 50.9 ± 17.8 years, women: 59.9%) were included in the analysis. Obesity was present in 27.3% [CI: 26.9–27.7%], with a 1.3% receiving APDs (typical: 48.8%, atypical: 51.2%; p = NS). Patients with obesity showed higher annual average of episodes (7.0 ± 4.0 vs. 5.5 ± 3.6), visits (12.1 ± 9.8 vs. 9.1 ± 8.5) and severity (0.5 ± 0.7 vs. 0.3 ± 0.6), p < 0.001. In the logistic regression analysis, obesity was related to APD use (OR = 1.5; CI: 1.3–1.8), hypertension (OR = 2.4; CI: 2.2–2.5), diabetes (OR = 1.4; CI: 1.3–1.5) and dyslipidemia (OR = 1.3; CI: 1.2–1.4), p < 0.001 in all cases. After adjusting, BMI was slightly higher in subjects on APD; 27.8 kg/m² vs. 27.4 kg/m², p = 0.002. Mean crude and adjusted (age, gender and comorbidities) annual costs were significantly higher in obese patients than in non obese; €980.89 ± 1,467.49 vs. €637.64 ± 1,244.49, p < 0.001, and €810.88 vs. €693.79, p < 0.001 respectively. All components of per patient per year costs were higher in the group of obese patients, p < 0.0001. CONCLUSION: Obesity was associated with the use of APDs and the presence of hypertension, diabetes and dyslipidemia. No differences were found between using typical or atypical APDs. Obese patients presented more comorbidity, use of health resources and associated costs.

**OBESITY—Methods and Concepts**

**A PROBABILISTIC BAYESIAN MARKOV MODEL IN WINBUGS FOR THE ECONOMIC EVALUATION OF THE TREATMENT WITH ORLISTAT OF ITALIAN OBESE PATIENTS**

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OBJECTIVES: The WinBUGS software is a powerful tool to analyze data in the framework of the bayesian theory and has recently been shown useful in developing complex probabilistic Markov models. Despite some clear advantages, this technique has not been fully exploited in health economic evaluations. We developed a cost-utility and budget impact analysis of the use of orlistat in Italian obese patients through this innovative modeling approach. METHODS: A probabilistic Markov model has been developed to simulate outcomes of the obese Italian population after four years of orlistat treatment plus six years of follow-up. The efficacy of the treatment derives from the XENDOS study. The model integrates a Framingham Heart Study-based algorithm to estimate cardiovascular risk. The
analysis is made in the societal cost perspective, adding direct medical costs charged both on the National Health Service and the patient, since orlistat is not reimbursed. Costs and health benefits are discounted at a 3.5% annual rate. RESULTS: The treatment with orlistat of the Italian obese population (estimated in more than 4 million subjects), produces an estimated average increase in quality-adjusted life expectancy of 0.05 (0.035–0.065) QALY/patient, an estimated reduction of cardiovascular events and diabetes onsets at an estimated overall increased cost (based on the current orlistat public price) of about 12 (1.7–13.7) million Euro in 10 years. On the Impaired Glucose Tolerance (IGT) patients subgroup (283,000 people), the benefits are relatively larger, and they come at an increased cost of 608 (–1.6–918) thousands Euro. Estimated average (95% CI) cost-utility incremental ratios are 60.8 (9.2–84.5) and 16.34 (–43.5–27.54) thousand Euro/QALY for the whole cohort and the IGT subgroup, respectively. CONCLUSION: Orlistat shows a good pharmacoeconomic profile, especially in IGT patients, with a cost-utility of 16.340 Euro/QALY. This value is lower than that of several therapeutic strategies commonly accepted in developed countries.

GEMCAS MODEL—A DECISION ANALYTIC MODEL ASSESSING THE COST-EFFECTIVENESS OF TREATMENTS FOR OBESITY AND ASSOCIATED CARDIOVASCULAR RISK FACTORS

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OBJECTIVES: Obesity, hypertension and dyslipidemia (low HDL-cholesterol, high triglycerides) are known risk factors (RF) for the development of cardiovascular diseases and diabetes melitus type 2 (DM). The aim of the study was to develop a decision analytic model as a tool to assess the cost-effectiveness of treatment options of obesity and associated cardiovascular risk factors. METHODS: As part of the German Metabolic and Cardiovascular Risk Project GEMCAS a decision analytic model from the German payer’s perspective was developed. RESULTS: The model has a cycle length of one year and consists of nine health states (HS): (HS1) DM without complications and no further RF; (HS2) DM without complications and one further RF (HS3) DM without complications and 2–4 further RF (HS4) DM with microvascular complications (HS5) DM with macrovacular complications (HS6) healthy (HS7) 1–4 RF (HS8) post myocardial infarction or stroke (HS9) death. Annual costs have been assessed for each health state as well as for transitions due to myocardial infarction or stroke; (HS1) 626 Euro (HS2) 794 Euro (HS3) 962 Euro (HS4) 6.276 Euro (HS5) 3.633 Euro (HS6), 0 Euro (HS7), 336 Euro (HS8) 1.710 Euro, transition costs for myocardial infarction are 4.560 Euro and for stroke 4.780 Euro. Target population has a defined risk profile and transition probabilities are calculated using the Framingham Risk Equation for myocardial infarction and stroke. Additionally an independent effect of obesity according to the INTERHEART study was assumed. The development of DM was calculated based on the risk equation from San Antonio Heart Study. CONCLUSION: The presented model is a valuable tool to assess the cost-effectiveness of different treatments options and can be adopted for new interventions easily.

POB4

POB5

QUANTIFYING THE QUALITY OF ECONOMIC EVALUATIONS OF OBESITY INTERVENTIONS: A CRITICAL APPRAISAL OF THE LITERATURE

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OBJECTIVES: Given the increasing frequency of obesity and the costs associated with it, it is vital to determine which interventions are effective and cost-effective versus the alternatives. A crucial step in both cases is a critical appraisal of the literature. This study examined the quality of economic evaluations (EE) of obesity interventions using a quantitative approach. METHODS: Economic evaluations were selected using the NHS Economic Evaluations Database (NHS EED, York UK) (1995–2006). Quality was based on the method by Chiu (2003) because its development involved many health economists and it provides an overall quality score (range: –1100) using 16 criteria. Associations between study characteristics and quality were examined using regression analysis. Characteristics included publication year, type of intervention (including diet, behaviour, medicine, surgery, combined intervention), source of effectiveness data (single study, literature review), country of evaluation, and source of funding. RESULTS: Thirty-four EEs were identified and all of them fulfilled only some criteria. The most common weaknesses were no discussion of potential biases and inappropriate time horizon or discounting method. Mean overall score was 52 (range: 24–76, SD: 13). Recent EEs were better than older ones (+1.5 points/year) and European EEs were better (15 points) than non-European ones. Source of effectiveness data and source of funding were not associated with quality after adjustment for year and country. Type of intervention was never associated with quality. CONCLUSION: The average quality of EEs seems moderate given a score of 52/100. There is much room for improvement and examination of individual criteria is indispensable in achieving this. Determination of overall quality scores is not an adequate substitute for a critical appraisal. Sometimes a single weakness in a “very good” EE can be fatal and render cost-effectiveness estimates useless. In contrast, elements of a “poor” EE can be valuable when determining the cost-effectiveness of an intervention.

PAIN—Clinical Outcomes Studies

INCIDENCE OF ACUTE PAIN IN TURKEY

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OBJECTIVES: Despite being a common problem, there is no published epidemiological data on pain in Turkey. This large scale survey had the main objective of demonstrating the incidence of acute pain, but also sought to explore how individuals perceive their pain, the impact it had on their lives, their perception of the attitudes of others towards their pain, treatments received and the adequacy of treatment. METHODS: Screening interviews identified respondents aged ≥18 years with acute pain, for in-depth interviews. It addressed the following aims: a) estimating the incidence of acute pain in Turkey; b) quantifying causes of acute pain; c) exploring the demographics of acute pain; d) exploring the impact of acute pain on individual’s quality of life and daily activities e) understanding current treatment practices. RESULTS: Six percent of the respondents had acute pain. Sixty-seven percent of the 313 respondents willing to participate, had pain due to another disease, 33% of them did not have any disease related to