apart from age, further be dependent on the availability of facilities, the preferences of patients and health care providers and on economic considerations.

SAT0234 EVOLUTION IN THE USE OF NSAIDS BETWEEN 1991 AND 2000. IMPACT OF THE NEW MARKETED DRUGS

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Background Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used drugs. In Catalonia (Spain), this group of drugs is the fourth most used group in the number of packages dispensed in recent years. Furthermore, new NSAIDs have recently become available on the Spanish pharmaceutical market.

Objectives To study the evolution in the use of NSAIDs in the province of Tarragona (Catalonia, Spain), with 450,000 inhabitants, during the period between 1991 and 2000. We also studied the commercial impact of the new marketed drugs in recent years.

Methods Data of all NSAIDs prescribed and dispensed in the Public Health System during the period of the study were obtained from the Catalanian Pharmacy Database. These data were converted into Defined Daily Doses (DDD) per 1,000 inhabitants per day (DHD), according the definition of the Nordisk Council of Medicine. Population of the province was obtained from the official census of various years.

Results The total amount of NSAIDs used has increased in these ten years from 24.12 to 42.54 DHD. Throughout the ten years period diclofenac, piroxicam, naproxen, ibuprofen, aceclofenac and indomethacin were the most used NSAIDs. The use of ibuprofen increased greatly and in the last year was the second most used drug in the group. Diclofenac and naproxen were used a lot throughout the period and even increased in the last years. Piroxicam and indomethacin decreased slightly over the period studied.

The use of new NSAIDs (dexketoprofen, nimesulide, celecoxib, lornoxicam and particularly meloxicam and rofecoxib) increased considerably. Rofecoxib was the fourth most used drug in the group in its first year on the market. New NSAIDs are more than 20% of the total NSAIDs used in the year 2000. Since the new NSAIDs have become available, other minority drugs such as ketoprofen, flurbiprofen or tenoxicam have been used much less.

Conclusion Despite the considerable number of NSAIDs available in Spain, only ten represent almost 95% of the total NSAIDs used in the year 2000. Concerns about a possible over-prescription of these drugs are reflected in the increase of use between 1991 and 2000. Data from the last year show that more than 40 people out of every 1,000 daily use a NSAID. The increase in the use of ibuprofen is noticeable but the new NSAIDs have had a commercial impact that was both considerable and fast. We conclude that aggressive advertising by pharmaceutical companies greatly influences the use and the selection of these drugs.

REFERENCES

- Brooks PM, Day RO. Non-steroidal anti-inflammatory drugs. Differences and similarities. *N Engl J Med.* 1991;**324**:1716–25
- Llop C, Paredes S, Llor C. Criteria for selecting and using non-steroidal anti-inflammatory drugs in primary health care. *Fam Practice* 2000;**17**:63–5

SAT0235 DETERMINANTS OF PRODUCTIVITY COSTS IN AS. COMPARATIVE STUDY IN THE NETHERLANDS, FRANCE AND BELGIUM

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Objectives To evaluate determinants of productivity costs in ankylosing spondylitis (AS) in three European countries.

Methods 216 consecutive prevalent AS out-patients started a 2 year longitudinal cost-of-illness study. AS-related health resource utilisation was collected by questionnaires every 2 months. Productivity costs were calculated by friction cost (FC) method and human capital (HC) approach. Cox proportional hazard analysis with costs as dependent variable was used to assess if ?country? was a determinant of productivity costs after controlling for age, gender, disease duration and time integrated disease activity (BASDAI:0–10; higher values indicating higher disease activity) if FC were the outcome or baseline physical function (BASFI:0–10; higher values indicating worse function) if HC costs were the outcome.

Results 209 patients completed follow-up. In the Netherlands (NL), (F) and (B) respectively, 70, 69 and 74% of patients were male, mean age 46 (sd:12), 38 (sd: 12) and 42 (sd: 14) yr, mean disease duration 24 (sd:12), 14 (sd:9) and 13 (sd:10) yr and 34, 13 and 24% had manual professions. 196 patients were in working age and 113 patients had a paid job.

Abstract SAT0235 Table 1

	Friction Costs (n = 113) HR [95% CI] (p)	Human Capital Costs (n = 196) HR [95% CI] (p)
Gender (female)	ns	ns
Age (HR/yr)	1.08 [1.04–1.2] (0.0001)	1.04 [1.02–1.06] (0.0001)
Disease duration	ns	ns
BASDAI (HR/point)	1.2 [1.1–1.3] (0.04)	Not included as variable
BASFI (HR/point)	Not included as variable	1.2 [1.1–1.3] (0.0001)
Manual profession	ns	ns
Country NL	2.4 [1.3–4.5] (0.007)	2.8 [1.2–4.7] (0.0007)

Conclusion In AS, productivity costs determined by FC and HC approach are significantly associated with the country studied. This finding has important consequences for the generalizability of health economic studies.

SAT0236 A LONGITUDINAL EVALUATION OF THE EFFECT OF A DECISION-SUPPORT SYSTEM ON OUTCOME IN RHEUMATOID ARTHRITIS

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Background Management of patients with RA is challenging and poses specific problems. With the help of a decision-support system (Swiss Clinical Quality Management in RA) that gives the rheumatologist feedback on treatment outcomes, the treatment

strategy can be adjusted. It is assumed that control of disease activity avoids or reduces signs and symptoms in the short term, and reduces the development of joint damage and disability in the long term.

Objectives To study if the decision-support system is effective in a) reducing disease activity, and b) maintaining the level of joint damage and disability in RA patients.

Methods 264 RA patients from 63 rheumatologists were included in a longitudinal evaluation, starting with a 3 month control period P0 (no feedback) followed by a 12 month intervention period P1 (with provision of feedback). Patients are nested in physicians, crossed with time nested in period. The main outcome variable is the Rheumatoid Arthritis Disease Activity Index (RADAI), a questionnaire on signs and symptoms in RA. The RADAI ranges from 0–10, higher scores indicate more disease activity. Disease activity (DAS28), disability (HAQ), and joint damage (X-ray score) were additionally measured in P1. To compare the development of the RADAI in P0 with P1, multilevel analysis (linear regression with random coefficients) was used; the unit of time is 30 days. For analysing differences in P1 for DAS28, HAQ and X-ray score, the paired t-test was used.

Results All patients had at least 1 feedback report at start of P1, 40% had 2, 23% had 3–6 reports. The regression model shows no time effect for RADAI in P0: -0.02 ($p = 0.75$) and a small time effect in P1: -0.04 ($p < 0.0001$). The latter means ca. -0.5 RADAI point in 12 months. The difference between P0 and P1 is significant ($p = 0.0011$). The time effects were not influenced by: age, gender, disease duration, baseline level of disease activity, number of consultations, or changes in DMARD therapy. Of the 202 patients on DMARD therapy during P1, $n = 114$ had the same therapy at begin and end. Over P1, the DAS28 was reduced with -0.4 (1.2) points ($p < 0.0001$), the HAQ remained stable with -0.1 (0.4) points ($p = 0.03$), and the X-ray score increased with $+6.4$ (10.4) points ($p < 0.0001$).

Conclusion These results point to a significant but small effect of a decision-support system in reducing disease activity in RA. Over 12 months, the medication strategy was changed in only a minority of patients. The SCQM may increase its efforts to stimulate physicians to adjust treatment, e.g. by the implementation of explicit treatment guidelines. Other possible reasons for sub-optimal effectiveness need to be explored, including limited treatment options and medication compliance.

SAT0237 THE DEVELOPMENT AND VALIDATION OF A MARKOV MODEL FOR THE ECONOMIC EVALUATION OF (NEW) TREATMENTS IN RHEUMATOID ARTHRITIS

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Background Due to the scarcity of resources (new) treatments need not only to prove that they are effective, but also cost effective. Especially in the case of new more costly treatment options as for rheumatoid arthritis, establishing the cost-effectiveness is relevant. Sometimes data about the costs and effects (in the long term) are absent, especially in the case of new treatment options. A method to overcome the problem of incomplete data and to extrapolate short-term endpoints to long-term outcomes is modelling.

Objectives To develop and validate a Markov model for the economic evaluation of (new) treatments in RA.

Methods A Markov model was developed with a cycle time of 3 months and a time-horizon of 5 years. In a Markov model patients are classified in a number of states (Markov states), defined by the severity of the disease. Development of the disease is defined as transitions between these states. Markov states were defined using the Disease Activity Score (DAS), and were valued in utility and medical and total costs using a dataset from a 48-week trial with methotrexate. The model was calculated for 'usual care' for patients in the first 5 years of their disease, using transition probabilities calculated from the 5-years follow-up data of patients participating in an open prospective study of early (disease duration < 1 year) RA. To test the validity of the model, the structure of the model, the inputs of the model, the results of the model, and the value of the model to the decision-maker were assessed.

Results The costs and the utility showed a clear relation with the Markov states. The expected medical and total costs per patient over 5 years were DFL 14.896, and DFL 27.889 respectively and the expected Quality Adjusted Life Years (QALYs) were 3.27. Differences in patient characteristics like age, gender, disease duration, used DMARDs, number of underwent orthopaedic procedures, and education had a moderate effect on the valuation of the Markov states in costs and utility. The input data for the Markov model was appropriate for the Dutch situation. The expected total costs seemed somewhat lower than the costs found in another Dutch study in the first six years of the disease, but the mean utility was comparable to utilities found in other studies. It appeared possible to validly extrapolate the course of the disease over 5 years with the Markov model, using transition probabilities calculated from only the first year of follow-up of the patients in the open study. In this study the value of the model for the decision-maker could not be well established.

Conclusion The developed Markov model is valid for use in economic evaluations in RA.

SAT0238 THE COST OF OSTEOARTHRITIS AND ITS ASSOCIATION WITH THE SEVERITY OF THE DISEASE

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Objectives To assess the cost related to caring for Osteoarthritis (OA) patients in Italy and to verify any association between cost and severity expressed in terms of Lequesne Index (LI) score.

Methods The analytic framework of the present study was a prevalence-based Cost of Illness Analysis. The societal perspective was adopted with a 6 months time horizon. Subjects: Eleven rheumatologic centres were selected all over Italy. These recruited and interviewed the first 30 consecutive OA patients presenting to their office with a diagnosis of knee osteoarthritis. To this purpose, a questionnaire was developed so to collect information about: demography, concomitant localisation of OA, LI score, direct and indirect costs. The severity of the disease was assessed at the time of the visit. To investigate the association between cost and severity we used multivariate linear regression techniques.

Results A total of 277 patients were recruited and interviewed. The average age was 65.7 (± 9.8) years, the average LI score