

baseline cholesterol levels and relevant co-morbidity. **RESULTS:** A total of 2341 patients were identified, of these 644 were initiated on rosuvastatin (93% on 10 mg), 606 on atorvastatin (53% on 10 mg, 39% on 20 mg), 613 on simvastatin (70% on 20 mg), 440 on pravastatin (79% on 40 mg) and 38 on fluvastatin (79% on 80 mg). Secondary prevention accounted for approximately 30% of patients. Average percent LDL-C reductions were 48.0 (CI95%: 46.6–49.5), 41.7 (CI95%: 39.9–43.4), 38.7 (CI95%: 37.3–40.0), 32.0 (CI95%: 30.1–33.9), and 29.7 (CI95%: 23.9–35.5) for rosuvastatin, atorvastatin, simvastatin, pravastatin and fluvastatin respectively. The proportion of patients attaining cholesterol goals was 75% for rosuvastatin, 68% for atorvastatin, 56% for simvastatin, 42% for pravastatin, and 34% for fluvastatin. After adjustment for risk factors the use of rosuvastatin was significantly associated with both greater LDL-C reduction (mean differences 5.4% to 18.3%, all  $p < 0.001$ ), and with increased goal attainment (odds ratios 0.60 to 0.11, all  $p < 0.001$ ) compared to users of other statins. **CONCLUSION:** We found evidence that in a real life setting, both percentage LDL-C reduction and the proportion of patients attaining 2003 European cholesterol goals is significantly greater among users of rosuvastatin compared to other statins. Results are consistent with those reported in clinical trials.

CV7

#### RESOURCE UTILIZATION AND COSTS FOLLOWING HOSPITAL INPATIENT ADMISSION FOR CONGESTIVE HEART FAILURE

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**OBJECTIVE:** To examine Medicare resource utilization and costs among patients with congestive heart failure (CHF) over the course of one year after an initial CHF hospital discharge. **METHODS:** Statistical analyses were conducted on Medicare Standard Analytic Files. A cohort of patients with an initial inpatient hospitalization for CHF between January 1, 1999 and December 31, 2000 were identified and followed for a period of one year. Outcomes assessed included the number of readmissions (CHF-related and all-cause) and emergency department (ED) visits; the mean time to each readmission/visit; mortality following discharge; number and timing of physician office visits; and total charges. Multivariate regression analyses were conducted to assess the likelihood of hospital readmission, likelihood of death, and total charges adjusting for patient characteristics and compliance with routine care. **RESULTS:** A cohort of 690,800 patients (weighted) was identified. Within one year of their initial hospitalization, approximately 20 percent of patients (136,460; 19.75%) were readmitted for CHF and over one-half (350,660; 50.76%) were readmitted for all causes. The time-to-event analysis revealed that increasing the time to first readmission decreases the overall number of readmissions and associated costs. Over 50% of patients visited the ED within 3 months of hospital discharge. The one-year mortality rate was 31.4%. The patient population that was readmitted within 30 days of initial hospital discharge accumulated the highest total charges over the course of the year (mean = \$66,639). In the multivariate model, the main cost drivers were the number of hospital readmissions and death anytime within the year (potentially due to high end-of-life costs). **CONCLUSIONS:** The large proportion of hospital readmissions and ED visits occurring shortly after discharge suggests that many patients are not sufficiently managed once outside the hospital. Increased compliance with physician visits could help decrease the overall number of both CHF-related and all-cause readmissions.

CV8

#### REAL WORLD MORTALITY OF THE HYPERTENSIVE PATIENT AS DEFINED IN THE ASCOT-LLA

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All cause mortality in the placebo group of ASCOT-LLA (Anglo-Scandinavian Cardiac Outcomes Trial-Lipid-Lowering arm) was 1.28%. ASCOT-LLA included hypertensive patients (HP) in primary prevention, with TC  $\geq 6.5$  mmol/L, not treated with statins and with at least 3 cardiovascular risk factors (CVRF). A lower CV morbimortality with atorvastatin ten mg vs placebo was demonstrated. **OBJECTIVES:** Evaluate the real world mortality of HP as defined in ASCOT-LLA in a Mediterranean population of HP not treated with statins. **METHODS:** Patients from seven primary care centres with a diagnosis of HT (CIAP = K86-K87) were included in a multicentric registry of one year follow-up (2004–2005) (n = 6309 patients). Main analysed variables were: basal age-sex, diabetes mellitus, stroke, smoking, TC/HDL-ratio and all cause mortality (2004). **RESULTS:** Of the 6309 patients, 2528 (40%) had a history of CHD and/or heart failure (HF) and/or TC  $> 6.5$  mmol/L and/or statin treatment and were excluded from the analysis. In the remaining 3781, CVFR  $\geq 3$  was confirmed in 831. The annual mortality of these patients was 2.89%, greater than ASCOT-LLA placebo group. In the group of 3781 patients with no history of cardiac disease nor TC  $> 6.5$  mmol/L and without statin treatment, those with CVRF  $\geq 3$  had a higher mortality (2.89%) vs CVRF  $< 3$  (1.86%) (Fisher:  $p = 0.0497$ ;  $\chi^2$ :  $p = 0.0795$ ). A significant relationship was demonstrated among CVRF number and mortality: 0 CVRF:0% mortality; 1 CVRF:1.4% mortality; 2 CVRF:2.7% mortality; 3 CVRF:2.0% mortality; 4 CVRF:4.8% mortality;  $\geq 5$  CVRF:5.9% mortality (Mantel-Haenzel test:  $p = 0.003$ ). **CONCLUSIONS:** Our data suggest that real world mortality of ASCOT-like hypertensives in a Mediterranean population is greater than the mortality found in the ASCOT (2.89% vs. 1.29%). A significant relationship was demonstrated among CVRF and mortality. Our data also suggest that the presence of CVRF  $\geq 3$  indicates a high mortality risk.

#### ECONOMIC STUDIES II

ES5

#### RIMONABANT FOR THE TREATMENT OF OVERWEIGHT AND OBESE INDIVIDUALS AT INCREASED CARDIOMETABOLIC RISK: AN ECONOMIC EVALUATION USING DISCRETE EVENT SIMULATION

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**OBJECTIVE:** Rimonabant, the first selective CB-1 receptor blocker, has proven effective in improving cardiometabolic risk factors and reducing weight in overweight and obese individuals. This study evaluated its cost-effectiveness in patients with a BMI  $> 27$  kg/m<sup>2</sup> in the UK. **METHODS:** A discrete event simulation was created to take into account multiple time-dependent risk factors—it predicts changes in anthropomorphic and physiologic parameters based on analysis of pooled RIO trials data, while simultaneously predicting onset of diabetes, cardiovascu-

lar events and diabetic complications. After 100,000 individuals are assigned baseline characteristics by sampling UK data, their baseline risks are predicted and they enter a main module where these are applied. Periodic updating takes place at doctors' visits and other events, such as premature treatment discontinuation and complications. Resource use, costs and utilities were obtained from UK databases. All outcomes are discounted at 3.5%/year. **RESULTS:** After one year treatment, patients on rimonabant plus diet and exercise lose more than three times the weight and show greater improvements in other cardiometabolic risk factors than patients on diet and exercise alone. With diet and exercise, 633 cardiovascular and 411 microvascular events are predicted to occur per 1000 patients, over 60 years. Lifetime costs average  $\leq 5692$ /patient. One year of rimonabant reduces cardiovascular and microvascular events by 18 and 10, respectively, with a corresponding reduction in complication costs. Discounted life expectancy increases by 40.2 years, and QALYs by 113.8. Extending treatment to 5 years increases life years and QALYs gained by a further 38 and 48%, respectively. Extensive sensitivity analyses, including varying the cost of treatment with rimonabant, indicate that rimonabant is cost-effective over a wide range of inputs. **CONCLUSIONS:** Rimonabant for the treatment of overweight or obese patients with or without comorbidities in the UK should be associated with acceptable cost-effectiveness ratios under a wide range of assumptions.

ES6

#### ENTRY AND PRICE RESPONSE IN MARKETS WITHOUT PATENT PROTECTION: THE CASE OF PHARMACEUTICALS IN ARGENTINA

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**OBJECTIVES:** The goal of this paper is to test the leader-follower model in the Argentinean pharmaceutical markets where patent protection does not apply allowing immediate entry. **METHODS:** It was used a leader-follower model where followers take leader prices to decide their own ones and the leader strategically incorporates followers' behavior in its decision. Two different groups of followers are studied separating the main three from the rest of the market competitors. The data used in this study is based in information published by Pharmaceutical Markets Argentina (PMA) complemented with indicators of needs and chronicity, obtained through interviews with physicians and pharmacologists, as well as the list of chemical entities used in the production of each product, and the nationality of manufactures. **RESULTS:** From the group of 88 therapeutic classes selected, 56 classes kept the same leader during the period 1988–1995, although just in nine of those cases the first entrant remains as market leader. The cases where market leader remains the same during the sample period but they were not necessarily the first entrants are defined as loose leadership markets, while cases of strict leadership are those where first entrants remained as market leaders during the sample period. **CONCLUSIONS:** The leader-follower hypothesis is checked and supported by the data, mirroring the results obtained under a patent regime. In addition, the lack of patents also raises the question of difference in behavior among followers. Therefore, two differentiated groups of followers are studied separating the main three from the rest of the market competitors.

#### DIRECT MEDICAL COSTS OF STROKE ACCORDING TO HANDICAP LEVELS AFTER 12 AND 18 MONTHS

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Stroke is the leading cause of long term disability worldwide and a frequent cause of hospital admissions. Considering the population aging, stroke is a growing health problem, and is increasingly more costly to manage. Financial burden is caused by the outcomes of acute stroke and its impact on a variety of health care resources. **OBJECTIVES:** To provide referential of health care resources and direct medical costs of post-acute management of stroke per handicap levels within the new French National Health System context. **METHODS:** Information provided by ECIC study on post-acute care delivered to 434 consecutive patients with stroke was considered to update data on the cost of stroke in France. Data on handicap levels assessed 10 days after stroke onset (Rankin scale), medication, rehabilitation, nursing care and ambulatory costs were obtained over 12 and 18 months after the initial acute hospital discharge. With a NHS perspective, only direct medical costs were considered. **RESULTS:** The mean direct medical cost of stroke in France, all handicap levels considered, is estimated at €15,644 and €17,699 over the first 12 and 18 month-periods respectively. At 18 months this cost increases from €8624.5 for patient with Rankin 1 to €39,010.5 for patients with Rankin 5. For patients with lower handicap (Rankin 1–3) hospitalisation for the acute management of stroke is the main driver of costs, whereas for patients with higher Rankin rehabilitation accounts for 70% of the total direct medical costs. **CONCLUSION:** Costs increase by five fold between the lowest and the highest handicap level. Whatever the Rankin considered, costs incurred during the first year represent almost 90% of cost at 18 months. New therapeutic advances reducing post-stroke consequences could have a major impact on health care expenditures.

ES7

ES8

#### TREATMENT COSTS OF DIFFERENT PHASES IN BREAST CANCER (BC) IN HUNGARY

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**OBJECTIVES:** While breast cancer has a high incidence worldwide, there is limited data on treatment costs to help decision-makers establish the cost-effectiveness of new treatments. This study's objective was to determine treatment costs of BC stages for postmenopausal BC patients in Hungary. **METHODS:** BC-specific resource use items were collected retrospectively on three cohorts: early breast cancer (EBC), local regional recurrence (LRR) and metastatic breast cancer (MBC) patients. Data was obtained from National Health Insurance Fund claims databases on inpatients, outpatients and pharmaceuticals. Cohorts were determined using ICD, WHO, ATC, TNM and procedure codes. Age > 55 served as proxy for postmenopausal status. The first 100 relevant patients at each stage entering the Oncology Report database in 2003 were included and followed for 1 year. Average annual patient costs with 95% confidence intervals (95%CI) were established using Hungarian national fee schedules and reported in euros. **RESULTS:** The final cohort included 87 patients with incident EBC, 79 patients with LRR, and 99 patients receiving active or palliative care for MBC. The frequency of diagnostic and surgical procedures, consultant visits