the most common diseases in Poland. Only 13% of those affected currently receive any kind of treatment. This is the first study in Poland with the intention of demonstrating the cost of CVI.

**METHODS:** A representative group of 1000 people over 18 years old was randomised, and 223 treated patients were questioned by an external agency *. All the data were collected with the help of a special resource utilisation questionnaire. Items measured included oral drugs, topical drugs, compression therapy, surgical and cosmetic interventions (sclerotherapy, operational procedures), diagnostic tests (including Doppler investigation) and hospitalizations. The value of social and family help, sick leave and early retirement due to CVI were also estimated (capital cost method).

**RESULTS:** The average total cost per person per year from the study group was 952,94 PLN (1 EURO = 3,4517 PLN) with average direct costs of 233,39 PLN and average indirect costs of 719,54. The total burden of CVI in Poland in terms of direct medical costs may reach 6.5 billion PLN (24% of the total cost). The distribution of total costs per person in the investigated group is as follows: oral treatment, 37,93 PLN (4%); local treatment (ointments, gels, creams), 26,15 PLN (3%); compression therapy 11,52 PLN (1%); all surgical interventions 46,84 PLN (5%); hospitalisations (all wards) 110,95 PLN (12%); family and social help 466,50 PLN (49%); sick leave 108,15 PLN (11%); pensions 144,90 (15%).

**CONCLUSION:** CVI represents an important economic burden for the Polish population. Among direct medical costs, oral treatment and compression constitute only 21%, while the cost of hospitalisation accounts for 48%. An early diagnosis, proper treatment and management of CVI leading to an optimal allocation of expenditures may contribute to a significant reduction of the total costs of CVI in Poland.

* PENTOR - Medical - Institute for Opinion and Market Research.

**PCV16**

**COST-EFFECTIVENESS OF AMLODIPINE TREATMENT IN PATIENTS WITH CORONARY ARTERY DISEASE IN THE U.K**

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**OBJECTIVE:** To investigate and quantify the impact on total treatment costs of cardiovascular disease associated with the use of amlodipine in patients with coronary artery disease (CAD) in the United Kingdom.

**METHODS:** A Markov cohort simulation model was developed to estimate the expected health outcomes and costs of CAD cohorts on amlodipine versus placebo over three years. Clinical outcomes included in the analysis were: hospitalization for angina; hospitalization for MI; hospitalization for congestive heart failure (CHF); PTCA; CABG; various combinations of these events and procedure-related outcomes, and death. Transitional probabilities used in the model were based on patient-level data from the Prospective Evaluation of the Vascular Effects of Norvasc Trial (PREVENT). Health outcomes were discounted at a rate of 1.5% and all costs were discounted at a rate of 6%.

**RESULTS:** The amlodipine cohort experienced fewer hospitalizations due to angina, CABG, PTCA, CHF, and MI than the placebo cohort did. The rate of hospitalization per patient in the placebo cohort was 61.8% while that in the amlodipine cohort was 44.3%. The cost per patient for treatment of CVD was £1,859 for amlodipine patients and £1,800 for placebo patients over three years of follow-up. For amlodipine use this equates to an incremental cost per hospitalization avoided of £332.

**CONCLUSION:** In the UK, the use of amlodipine resulted in improved clinical outcomes through a marginal investment in cost.

**PCV17**

**ECONOMIC EVALUATION OF ENOXAPARIN IN PATIENTS WITH ACUTE MEDICAL ILLNESS: AN ITALIAN ECONOMIC STUDY FROM THE MEDENOX TRIAL**

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**OBJECTIVE:** To generate estimates of the cost-effectiveness of thromboprophylaxis with enoxaparin versus no thromboprophylaxis (usual care) in patients with acute medical illness in the health-care setting of Italy from the NHS perspective.

**METHODS:** Markov process analysis techniques were used to model the health-economic outcomes. Data collection was based on probabilities of clinical events from clinical trial data from the MEDENOX trial and other published literature, OECD country-specific general population mortality and Delphi panels. Units of health-care utilization were derived from the Delphi panels. Prices and tariffs were derived from official lists.

**RESULTS:** Analysis over one year showed that the cost per venous thromboembolic (VTE) event avoided was Lit4.500.586 (EURO 2324) and cost per life saved was Lit16.042.624 (EURO 8285), when assuming no higher risk for morbidity and mortality for asymptomatic patients. The lifetime model (again, assuming no higher risk for recurrence of VTE in asymptomatic patients), showed that enoxaparin increased the total costs from Lit804.900 (EURO416) to Lit1.180.000 (EURO609), while the life expectancy increased from 14.11 to 14.43 years. Consequently, cost per life year gained was Lit1.172.188 (EURO605), and the cost per event avoided was Lit4.343.446 (EURO2.243).

**CONCLUSION:** The results showed that the favorable clinical benefit of enoxaparin observed in MEDENOX...
also resulted in a positive short- and long-term health economic benefit in acutely ill medical patients. The health-economic benefit of enoxaparin was positively related with the length of the follow-up period and a higher risk for recurrence of VTE and mortality in asymptomatic patients.

**Abstracts**

**PCV18**

**COST EFFECTIVENESS OF ENOXAPARIN VS. UNFRACTIONATED HEPARIN FOR THE PROPHYLAXIS OF DVT AND SUBSEQUENT LONG-TERM COMPLICATIONS IN TOTAL HIP REPLACEMENT SURGERY IN THE UNITED KINGDOM**

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The post-thrombotic syndrome (PTS) is a serious long-term complication of deep-vein thrombosis (DVT) that may only be avoided by preventing the initial DVT. No pharmacoeconomic assessment of low molecular weight heparin (LMWH) has included the impact of reducing these long-term complications in the UK.

**OBJECTIVES:** To determine the cost effectiveness of LMWH (enoxaparin, 7 days, 40 mg daily) versus unfractionated heparin (UFH, 7 days, 15,000 units daily) for the universal prophylaxis of DVT and PTS in patients undergoing total hip replacement surgery (THRS).

**METHODS:** A probabilistic health-state transition model using a Monte-Carlo (MC) simulation was developed to project the long-term cost-effectiveness of the two strategies in a cohort of 10,000 patients. The risk of developing a DVT in the short term (i.e., two weeks) was estimated using epidemiological and clinical trial data. Patients who survived a DVT in the short term were exposed to the long-term risk of PTS and recurrent VTE whereas other surviving patients were only exposed to the long-term risk of idiopathic PTS and VTE. Economic literature and expert opinion served as input for the model's resource use and costs for DVT prophylaxis, clinical diagnosis and treatment of DVT, PE, and PTS. Five thousand MC simulations were run on the model.

**RESULTS:** In the baseline, point-estimate analysis, LMWH use prevented 240 DVTs and 13 deaths in the short term compared to UFH, and resulted in net savings of £10 per patient. In the long term, LMWH saved an additional £36 in DVT complication costs. LMWH was the dominant strategy in 70% of cases and was cost-effective in 72% overall.

**CONCLUSION:** This is the first economic analysis comparing LMWH and UFH that includes the long-term complications of DVT. Our model indicates that the inclusion of these long-term complications supports the widespread use of LMWH in patients undergoing THRS.

**PCV19**

**A COST-EFFECTIVENESS ANALYSIS OF THE USE OF CARVEDILOL COMPARED TO BISOPROLOL IN CHRONIC HEART FAILURE**

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**OBJECTIVE:** To estimate the cost-effectiveness of carvedilol relative to bisoprolol as adjunctive beta blocker (BB) therapy in patients with chronic heart failure.

**METHODS:** Comparison of survival benefits was performed using the CIBIS-II placebo group as a representative cohort not treated with a BB. Using parametric survival analysis, five-year survival estimates were calculated for bisoprolol and carvedilol based on published data for the major mortality studies of the two BBs with similar placebo mortality risks (CIBIS-II (hazard ratio 0.66) and US Carvedilol Trial Program (hazard ratio 0.35)). Limited and extended benefit scenarios were estimated under varying assumptions about the sustainability of BB treatment effect. Under the limited benefits scenario the treatment effect was conservatively assumed to last only until the end of the reported trial periods. The extended benefits scenario was assumed to persist up to five years. Taking the perspective of the UK NHS we estimated differences in treatment costs (medication, outpatient/GP visits, hospitalization), and absolute mortality benefits to form an incremental cost-effectiveness ratio.

**RESULTS:** The estimated benefit per patient at five years under the extended benefits scenario was 145 days (0.398 yr.) for bisoprolol and 301 days (0.823 yr.) for carvedilol. The corresponding figures for the limited benefits scenario are 93 days (0.254 yr.) for bisoprolol and 119 days (0.325 yr.) for carvedilol. Over five years the estimated incremental cost-effectiveness ratio of carvedilol compared to bisoprolol is £5,900 per LYG under limited and £1,800 per LYG under extended benefit scenarios respectively.

**CONCLUSIONS:** Carvedilol represents a cost-effective adjunctive treatment compared to bisoprolol in patients with chronic heart failure. Statistical extrapolation indicates that the relatively greater mortality benefits associated with carvedilol relative to bisoprolol are accrued at a cost, which compares favourably with that of many other common cardiovascular treatments such as statins and ACE inhibitors.

**PCV20**

**COST-EFFECTIVENESS STUDY TO DETERMINE THE IMPACT OF A TOBACCO OUTREACH PROGRAM FOR ADOLESCENTS**

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**OBJECTIVE:** The goal of this study is to evaluate and determine the cost-effectiveness (CE) of a college of pharmacy’s tobacco outreach program targeting thirteen-