

## PCV29

**COST-EFFECTIVENESS OF REDUCTION IN CARDIOVASCULAR OUTCOMES WITH ATORVASTATIN IN PATIENTS WITH NORMAL TO MILDLY ELEVATED CHOLESTEROL LEVELS, TREATED FOR HYPERTENSION: THE ASCOT-LLA STUDY**Lindgren P<sup>1</sup>, Buxton MJ<sup>2</sup>, Kahan T<sup>3</sup>, Poulter N<sup>4</sup>, Dahlöf B<sup>5</sup>, Sever P<sup>4</sup>, Wedel H<sup>6</sup>, Jönsson B<sup>7</sup><sup>1</sup>Stockholm Health Economics, Stockholm, Sweden; <sup>2</sup>Brunel University, Uxbridge, Middlesex, UK; <sup>3</sup>Karolinska Institutet, Stockholm, Sweden; <sup>4</sup>Imperial College, London, UK; <sup>5</sup>Sahlgrenska University Hospital/Östra, Göteborg, Sweden; <sup>6</sup>Nordic School of Public Health, Göteborg, Sweden; <sup>7</sup>Stockholm School of Economics, Stockholm, Sweden

**OBJECTIVES:** In the Anglo-Scandinavian Outcomes Trial (ASCOT), patients with normal or mildly elevated cholesterol and treated hypertension, treated with atorvastatin 10 mg had 36% fewer fatal coronary events and non-fatal heart attacks, a 27% reduction in fatal and non-fatal stroke, and a 21% reduction in CV events and procedures. The objective of this study was to evaluate the cost-effectiveness of this strategy. **METHODS:** Analyses were based on cost per event avoided. Cardiovascular events and procedures and number of non-fatal myocardial infarctions (MI) and cardiovascular deaths were the measures of effectiveness. Costs for resources (study drug, concomitant medications, hospitalization, ambulatory visits) were estimated based on data collected on the case report forms, and local costs for Sweden and the UK. Data from the intention to treat population was aggregated. Prices in 2003, Using Euros, were (1€ = 9.1627 SEK, 0.6285 GBP). **RESULTS:** The net cost per-patient in Sweden was 450€ (total cost of 4201€ vs 3751€ in the placebo arm) and 410€ in the UK (5528€ compared to 5118€). Cost for the study drug was 1034€ and 1087€ in Sweden and the UK respectively. Part of this cost is offset by saving in other resources, mainly hospitalizations. Cost-effectiveness ratios are 12,758€ and 38,727€ per event avoided in Sweden for total cardiovascular events and procedures and for non-fatal MI and death from coronary heart disease respectively and 11,628€ and 35,298€ per event avoided for the two different endpoints in the UK. Atorvastatin was thus more expensive than placebo but also more effective. **CONCLUSION:** Based on comparisons with other studies on lipid-lowering we conclude that treatment as in the ASCOT study, with atorvastatin 10 mg appears to be a cost-effective treatment strategy.

## PCV30

**COST-EFFECTIVENESS OF N-TERMINAL PRO-BRAIN NATRIURETIC PEPTIDE IN THE DIAGNOSTIC ASSESSMENT AND MANAGEMENT OF PATIENTS WITH DYSPNEA IN THE EMERGENCY DEPARTMENT**

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**OBJECTIVES:** To evaluate the cost-effectiveness of N-terminal pro-Brain natriuretic peptide (NT-proBNP) in the diagnostic assessment of patients with dyspnea in the Emergency Department (ED). **METHODS:** We developed a decision model to compare standard clinical assessment versus patient evaluation guided by NT-proBNP (Elecys proBNP assay, Roche Diagnostics). The model represents diagnostic accuracy for acute congestive heart failure (CHF) of both strategies and resulting events during the initial ED visit and 60-day follow-up. Clinical data were based on the PRIDE Study. In this prospective study of 599 patients presenting to the ED with dyspnea, an NT-proBNP > 900 pg/ml was the strongest predictor of final diagnosis of acute CHF, as judged by blinded physicians. The primary clinical end-

point of our cost-effectiveness analysis was serious adverse events (SAE) including urgent care visits, ED presentations, hospitalizations, and deaths. Secondary endpoints were accuracy of CHF diagnosis and 60-day mortality. Our model assumes that resource utilization depends on true CHF status and probability of CHF as estimated by ED physicians, thus, the economic endpoint was reduction in direct medical costs due to saved echocardiograms and hospitalizations. Costs were based on the MGH cost accounting database, Transition Systems Inc. (TSI). **RESULTS:** Diagnostic assessment and management with NT-proBNP was associated with a 10% reduction in direct medical costs, a cost savings of \$492 per patient, and a 2.5% relative risk reduction of SAE. NT-proBNP testing dominated standard assessment. Furthermore, NT-proBNP testing was associated with a 1.2% reduction in 60-day mortality, in spite of a 1% reduction in overall diagnostic accuracy. NT-proBNP testing reduced echocardiograms by 58%, prevented 13% of initial hospitalizations and reduced hospital days by 12%. **CONCLUSIONS:** The use of NT-proBNP in the diagnostic assessment of acute CHF improves patient outcomes and leads to potential cost-savings of more than \$500 million in the US health care system.

## PCV31

**COST OF IN-PATIENT CARE AFTER ADMISSION FOR WARFARIN ASSOCIATED ADVERSE DRUG REACTIONS**Ofori B<sup>1</sup>, Donnan P<sup>1</sup>, Goudie B<sup>2</sup>, Timoney A<sup>2</sup>, Davey P<sup>1</sup><sup>1</sup>University of Dundee, Dundee, UK; <sup>2</sup>NHS Tayside, Dundee, UK

**OBJECTIVES:** The use of warfarin has become prevalent particularly for preventing stroke in non-valvular atrial fibrillation in older people. Any increase in the number of adverse drug reactions (ADRs) in actual practice could have important implications for costs of care. There is a paucity of data on the cost consequences of warfarin related ADRs. **METHODS:** The incidence of ADRs was examined in an inception cohort of 735 patients in Tayside accumulating 583 patient years follow-up, who were first dispensed warfarin for any indication between July 2000 and December 2000. Inpatient acute care costs for the National Health Service were calculated for major bleeding, as defined by Landefeld (1989), other minor events and asymptomatic over-anticoagulation (admission to hospital for management of INR > 4.4). Costs were derived from the Scottish Health Service Costs Manual 2001/02 and were based on length of stay in specific specialties and hospitals. The base case calculated mean direct costs per period of care. The bootstrap method was used to calculate the mean and 95% confidence interval cost per admission to hospital for ADR based on direct costs alone. **RESULTS:** The incidence rate of major bleeding was 1.8%/year (95% CI 0.7%–2.9%). There were also 29 minor hospitalisable events and 13 admissions for over-anticoagulation. The mean acute direct in-patient care cost for a major bleed was £1488 (95% CI £626–£2350), and for a minor bleed £345 (95% CI £239–£450). Costs associated with over-anticoagulation were £514 (95% CI £179–£848). The bootstrap mean admission cost based on direct costs was £627 (95% CI £171–£1294). Half of the total cost of £33,036 (and 214 in-patient days of care) could be attributed to minor events and over-anticoagulation management. **CONCLUSIONS:** From a direct cost of care perspective minimising admissions for “minor” events could result in significant savings.