

### ASSESSMENT OF LIPID ABNORMALITIES: PREVALENCE AND ATTAINMENT OF LIPID GOALS/NORMAL LEVELS AMONG ADULTS IN THAILAND

PCV5

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**BACKGROUND:** Despite effective lowering of low density lipoprotein cholesterol (LDL-C) with statin for prevention of cardiovascular events, risk remains high in those with mixed dyslipidemia. **OBJECTIVES:** To examine the prevalence of dyslipidemia before and after lipid modifying therapy (LMT) use in Thailand. **METHODS:** We recruited 807 patients (mean age 59 and 45.2% male) who, between January 2001 and June 2007, aged  $\geq 35$  years, initiated LMT, had  $\geq 1$  lipid abnormality and follow-up  $>12$  months after initiating LMT, with a complete lipid panel (LDL-C, high density lipoprotein cholesterol [HDL-C] and triglycerides [TG]) before and 12 months after therapy. Patients with coronary heart disease (CHD), type 2 diabetes or a 10-year CHD risk  $>20\%$  were classified as high (cardiovascular) risk patients. Threshold levels for LDL-C, HDL-C and triglycerides were specified as per NCEP ATPIII Guidelines. **RESULTS:** At baseline, 65%, 34%, and 43% exhibited elevated LDL-C, elevated TG, and low HDL-C, respectively while 35% had elevated LDL-C alongside low HDL-C and/or elevated TG. Among high-risk patients (n = 430), 68%, 35%, and 44% exhibited elevated LDL-C, elevated TG and low HDL-C, respectively; while 38% had elevated LDL-C alongside low HDL-C and/or elevated TG. Among the sample, 77% were on statins, 7% on fibrates, and 13% on both. After 12 months, 21%, 32%, and 39% of patients still had elevated LDL-C, elevated TG and low HDL-C, while 18% had elevated LDL-C alongside low HDL-C and/or elevated TG. High-risk patients had similar degrees of persistent dyslipidemia with 27%, 25%, 44%, and 21% experiencing elevated LDL-C, elevated TG, low HDL-C, and elevated LDL-C alongside low HDL-C and/or elevated TG, respectively. **CONCLUSIONS:** This cohort had improved LDL-C levels after therapy, with no improvement of TG and HDL-C levels among the overall, and moderate and negligible among the high-risk population, respectively. These patients may benefit from other types of LMT.

### LOST YEARS OF LIFE DUE TO DEATH FROM PULMONARY EMBOLISM IN HOSPITALIZED PATIENTS VERIFIED BY AUTOPSY FROM 1983 TILL 2005

PCV8

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**OBJECTIVES:** To assess average amount of life-years lost due to death from pulmonary embolism (PE) confirmed by autopsy in patients hospitalized at internal medicine department. **METHODS:** In our prospective observation we analyzed all fatal cases at Second Department of Internal Medicine at University Hospital Bratislava, where cause of death was verified by autopsy during the period from 1983 till 2005. Age, sex, clinical diagnosis, and pulmonary embolus finding from autopsy were recorded for each case. Sex adjusted life expectancy for each calendar year (1983–2005) was used from official statistical sources available for Slovakia and lost years of life were calculated accordingly. **RESULTS:** There were 1375 deaths and in 70% (n = 963) autopsy was performed during the observational period of 23 years. Fatal PE was found in 12% of cases (n = 118), from which 64 cases were not clinically diagnosed prior to autopsy. Average age for group with confirmed PE (n = 118) was 76.5 years (interval 38–96) with 54 (46%) males and 64 (54%) females. As calculated from life expectancy data, there were 939 life-years lost due to fatal PE verified by autopsy. In average 42.7 years of life (95% CI 32.8–52.6) were lost each year. **CONCLUSIONS:** Results of our study shows that PE continues to be important cause of mortality in hospitalized patients, accounting for 12% of deaths at internal department. In average 42.7 years of life were lost each year in one medical department due to PE. Despite the advances in diagnostic methods and thromboprophylaxis of VTE during the past decades, loss of life-years caused by fatal PE are still significant among medically ill patients in the period from 1983 till 2005.

### CARDIOVASCULAR DISORDERS – Cost Studies

#### POTENTIAL COST SAVINGS OF SMOKING CESSATION WITH VARENICLINE AMONG INSURED CHINESE POPULATION

PCV9

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**OBJECTIVES:** This study is to estimate potential cost savings by reducing the incidence of two major smoking-related illnesses—chronic obstructive pulmonary disease (COPD) and coronary heart disease (CHD)—through successful smoking cessation among insured Chinese population. **METHODS:** A predictive economic model was constructed upon a hypothetical cohort of insured patients to assess cost savings of an oral smoking cessation drug (varenicline) in terms of reduced COPD/CHD incidence over 15 years (at 5-year intervals). The size of the cohort was determined by

COPD/CHD prevalence, COPD/CHD population attributable to smoking and percentage of patients insured drawn from public information and literature, and data of smokers' willingness to use oral smoking cessation drugs obtained from internal market survey. Medical treatment costs of varenicline were estimated according to current pricing scheme. Cost-savings at different intervals were estimated using parameters of successful tobacco abstinence rate calculated from varenicline clinical trials, risk reduction of COPD/CHD drawn from literature, and annual management costs of COPD/CHD patients obtained from provincial health insurance database. Sensitivity analysis on tobacco abstinence rate in varenicline users was also performed. Overall cost-savings were then estimated combining medical treatment costs of varenicline and associated cost-savings together. Cost-savings due to reduced disease risk are calculated at each 5-year interval. **RESULTS:** A total of 19,583 subjects are included in our cohort. Costs of completed varenicline cycles are estimated to be RMB 42 million. At the first year, medical costs for varenicline outweigh the savings by around RMB 32 million. However, increased cost savings are observed at Year 5, 10, and 15, ranging from RMB 25–27 million, RMB 120–126 million, RMB 242–253 million, respectively. **CONCLUSIONS:** Successful smoking cessation through varenicline treatment could lower the burden of smoking-related illness in China, and its associated cost savings are substantial to the society in the long run.

PCV10

#### COST SAVINGS OF SINGLE PILL AMLODIPINE/ATORVASTATIN THERAPY IN HYPERTENSION AND DYSLIPIDEMIA PATIENTS IN CHINA

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**OBJECTIVES:** This study is to estimate health expenditures in hypertension and dyslipidemia (HTN/DYS) patients with cardiovascular risks over a period of 10 years in Chinese health-care settings. Costs are compared among patients using single pill amlodipine/atorvastatin (SPAA) therapy, amlodipine therapy only, and no intervention. **METHODS:** Three hypothetical cohorts of HTN/DYS patients were constructed: 1) SPAA group; 2) amlodipine only group; and 3) no intervention group. The size of eligible population was determined by national prevalence data on patients with HTN/DYS and those not receiving statin therapies, and on percentage of patients currently insured derived from total publication. For each group, data on risk of having cardiovascular illness over 10 years, average costs for cardiovascular illness management per patient, and average costs for HTN/DYS treatment per patient were identified from existing literature. Overall health expenditures were then calculated by costs of having cardiovascular illness within 10 years, plus costs of treating HTN/DYS over 10 years. Comparisons were made between SPAA versus amlodipine only, and SPAA versus no intervention. **RESULTS:** Of the 26.89 million eligible patients included in this study, the overall health expenditures over 10 years in patients with SPAA therapy, amlodipine only, and no intervention were estimated to be RMB 37.65 billion, RMB 59.17 billion and RMB 75.30 billion, respectively. The SPAA therapy allows payers to save annual cost of 2.15 billion when compared with amlodipine only therapy, and annual cost of 3.77 billion when compared with no intervention at all. **CONCLUSIONS:** SPAA therapy in HTN/DYS patients is likely to generate more cost savings to the society by reducing the costs of cardiovascular illness, when compared with traditional therapies.

PCV11

#### EFFECTS OF MEDICATION SUPPLY ON HEALTH-CARE COSTS AND RE-HOSPITALIZATIONS IN PATIENTS WITH CHRONIC HEART FAILURE

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**OBJECTIVES:** Previous evidence has shown that using Angiotensin Converting Enzymes (ACEIs) or Angiotensin Receptor Blockers (ARBs) results in decreased morbidity among patients with chronic heart failure (CHF). However, the benefits earned from medications depend on the amount of medications supplied and used. This study aims to determine the effects of medication supplies on health-care costs and hospitalizations in CHF patients receiving ACEIs or ARBs. **METHODS:** We retrospectively examined an electronic patient database in a provincial hospital located in the north of Thailand. All patients with an ICD-10 of I-50.0 (CHF) receiving either ACEIs or ARBs from January to December, 2003 were included. Their medication supplies were assessed using Medication Possession Ratio (MPR) method during the study period following the index date. The association between medication supply (appropriate: MPR 0.8–1.20, oversupply: MPR  $>1.20$ , undersupply: MPR  $<0.8$ ) and all-cause rehospitalizations within 1 year was determined using Cox-proportional hazard model. Total direct health-care cost was compared between all groups using multiple linear regressions. All analyses were adjusted for propensity score (PS) and other variables including age, sex, prior health-care use, and insurance status. **RESULTS:** Among 1012 CHF patients, 389 received ACEIs or ARBs. The mean age was 66 years with 56% female. Forty-two percent were undersupplied, while 56% and 2% were appropriately supplied and oversupplied respectively. The adjusted hazard ratios of under and oversupply for all-cause rehospitalizations were 1.21 (95% CI: 0.79–1.86) and 3.90 (95% CI: 0.89–17.06). Comparing with the group appropriately supplied, total direct medical cost in the undersupplied group was significantly higher at 11,027 baht (95% CI: 325–21,727), while non-significant trend in the oversupply group was observed. **CONCLUSIONS:** Under medication supply is significantly associated with higher health-care cost in patients with chronic heart failure.