A Retrospective Cohort Study of All-Cause Mortality and Cardiovascular Events In Patients with Established Cardiovascular Disease in Thailand

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Backgrounds

National Registry 2005 – 2009

: Cardiovascular death (coronary artery disease, cerebrovascular disease and hypertension) 34,000 – 37,000/ year

Thai ACS Registry (1st August 2002 – 31th October 2005) : 17 hospitals

: 9,373 patients (STEMI: 40.9%, NSTEMI: 37.9%, UA: 21.2%)

: In hospital mortality 12.6%

: Median in hospital cost 45,157 baht/patient

Backgrounds *(cont.)*

REACH Registry :

: 45,227 patients with high risks for cardiovascular disease (506 of Thai patients)

: 4 years follow-up

: 18.3% of patients with prior ischemic events (prior myocardial infarction or stroke) had subsequent cardiovascular events

: Aspirin alone 56% and Aspirin with other antiplatelet drug 11.2 %

: Lipid lowering drug 77%

(JAMA 2010; 304: 1350 – 1357)

Backgrounds *(cont.)*

All of the Thai patients reported in REACH Registry and Thai ACS Registry were enrolled in university hospitals or provincial general hospitals which do not represent overall cardiovascular situation in Thailand

Purpose

Primary purpose

: To evaluate the overall all-cause mortality and cardiovascular events in patients with established cardiovascular disease.

Secondary purpose

: To evaluate the predictors for all-cause mortality and cardiovascular events in patients with established cardiovascular disease

: To evaluate the cost per patient

Inclusions

Inpatients aged 45 years or older with one of the following criteria

1. Documented coronary artery disease : 1 or more of the following criteria

   1.1 Unstable angina with documented CAD

   1.2 Non ST elevation myocardial infarction

   1.3 ST elevation myocardial infarction

2. Documented cerebrovascular disease : Transient ischemic attack or ischemic stroke

3. Documented peripheral arterial disease :

   History of intermittent claudication with intervention such as angioplasty, stenting, atherectomy, peripheral arterial bypass graft or amputation

How to get the data

Search for inclusions patients from ICD 10 and ICD 9-CM procedure (2005)

: สปสช + สปส + กรมบัญชีกลาง

: *Demographic data (age, gender etc)*

: Principal diagnosis

: Co-morbidity

:Cause of death

: Type of discharge (death, referral, home discharge)

: Type of hospital

Exclusions

Patients who were not able to follow up regularly during the 5 years period

: The follow-up data has been lost for more than 6 months

Data collection

: Demographic data at baseline

sex, age, type of cardiovascular disease (CAD, CVD or PAD),

co-morbidity disease (DM, HT, DLP, atrial fibrillation)

type of hospital intervention (PCI, thrombolysis etc),

type of admitted hospital,

mode of payment

: Follow up the data for 5 years

: All-cause mortality (ทะเบียนราษฎร์)

: Cardiovascular death or non-cardiovascular death (if death happened in the hospital)

Data collection *(cont.)*

: Cardiovascular death ; fatal stroke, fatal myocardial infarction or other cardiovascular death (death of cardiac origin, death following vascular operation, sudden and unexpected death, death attributed to heart failure,

: Cardiovascular event

; Cardiovascular hospitalization : hospitalized for acute coronary syndrome, transient ischemic attack or ischemic stroke, admit for any cardiovascular intervention (angioplasty, stenting, bypass grafting, carotid stenting or intervention) or amputation after 3 months of first admission

Sample size

REACH registry

: Cardiovascular event 3% per year

: Expected data missing (loss follow up) $\leq$ 30%

: Follow up time = 2 year

: Sample size should be 40,000

2009 : Acute myocardial infarction	51,212
Acute cerebral infarction	57,435
Transient ichemic attack	7,192

Endpoints

Primary endpoints

: all-cause mortality (search from national registry records ; ทะเบียนราษฎร์)

: Cardiovascular death (from in-hospital mortality records only)

: Cardiovascular events

Secondary endpoints

: risk factor for mortality and cardiovascular events in Thai patients with established cardiovascular disease

: Total hospital cost per patient

Statistics

: Continuous variables : mean ± SD

: Categorical variables : frequencies and percentage

: Comparison between continuous variables : *t*-test

: Cumulative incidence rates was reported as Kaplan-Meier cure

Statistics (continue)

: Multivariate analysis for determine the predictors of 4-year mortality and cardiovascular death

: Variables for the predictors of 4-year mortality and cardiovascular death

sex; age; history of diabetes; atrial fibrillation; vascular disease status (single vascular disease or poly vascular disease)

: Statistical significance was considered as 2-sided probability of less than 0.5

Expected Benefits

: Overall mortality of patients with high risk cardiovascular disease in a large Thai population of (expected more than 150,000 patients)

: Predictors for mortality and cardiovascular events

: Benefit for further health economist

: Limitation ; Retrospective study, limited data

Thank you for your attention