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PCV20

PREVALENCE OF SEVERE TREATMENT RESISTANT HYPERTENSION AND ELIGIBILITY FOR CATHETER-BASED RENAL DENERVATION IN AUSTRALIA – A PRELIMINARY ANALYSIS

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OBJECTIVES: Catheter-based renal denervation (RDN) has emerged as a new therapy option for patients with treatment resistant hypertension (TR-HTN). However, inconsistency in the definition and prevalence estimates of TR-HTN has the potential to cause confusion with regards to: (1) identifying patients who may be eligible for RDN; (2) therapeutic options before consideration for RDN; and (3) estimates of potential budget impact. The objective of this analysis is to provide an evidence-based estimate of the prevalence of severe TR-HTN to determine the RDN eligible patient population in Australia. **METHODS:** Based on published consensus guidelines criteria, severe treatment HTN was defined as SBP \geq 160 mm Hg despite receiving 3 or more anti-HTN drugs including a diuretic. Published prevalence of Australians with treated HTN was combined with evidence extracted from the literature regarding HTN severity, medication usage and clinical trial exclusion rate to estimate the number of RDN eligible patients in Australia. **RESULTS:** In the most recent published national assessment, the gross prevalence of HTN in Australia was estimated as 34%, with a treatment rate of 53%. The current analysis estimated the prevalence of severe TR-HTN amongst treated HTN to be 3.5%. When exclusion criteria for RDN were applied, the eligible population was estimated at 1.1% of those receiving treatment for HTN. **CONCLUSIONS:** RDN eligible patients represent a small and discrete subset of all patients receiving HTN treatment and, when the consequences in this high risk population are considered, would represent a moderate impact on government health budgets. In addition, applying standardised and clinically based RDN selection criteria may lead to increased scrutiny and improved clinical management in the broader pool of HTN patients – some of whom may achieve a sufficient reduction in SBP without the need for RDN.

PCV21

THE RELATIONSHIP BETWEEN MASKED HYPERTENSION AND OBESITY

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OBJECTIVES: Masked hypertension is associated with an increased risk for cardiovascular conditions. The aim of the study was to evaluate the relationship obesity parameters, including body weight, waist circumference, body mass index. **METHODS:** The study group consisted of 118 consecutive patients with masked hypertension and 115 healthy control subjects. After a complete medical history and laboratory examination, patients' height, weight, waist circumference heart rate, and office blood pressure were recorded. All subjects underwent ambulatory blood pressure monitoring. Masked hypertension is defined as normal office blood pressure measurement and high ambulatory blood pressure level. **RESULTS:** Baseline characteristics in patients and controls were similar. Waist circumference (93.5 \pm 12.4 vs. 87.5 \pm 8.5, P<0.001), weight (79.7 \pm 11.4 vs. 68.3 \pm 9.9, P<0.001), body mass index (29.9 \pm 3.7 vs. 25.1 \pm 4.6, P<0.001) in masked hypertensive subjects was significantly higher than controls. **CONCLUSIONS:** This study demonstrated that anthropometric indices such as waist circumference, body mass index were higher in masked hypertensive patients. It can be suggested that redefining obesity might be helpful in early detection of masked hypertension.

PCV22

BODY MASS INDEX (BMI) AS A PREDICTOR OF OUTCOME AFTER CORONARY ARTERY BYPASS GRAFTING: AN ASIAN PERSPECTIVE

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OBJECTIVES: There is considerable literature from developed nations on the effect of body mass index (BMI) on outcomes following cardiac surgery. Increased BMI is associated with an increased postoperative morbidity. World health organization (WHO) has suggested modified scale for Asians to categorize BMI. We have studied the effect of BMI on our population, using modified scale, as predictor of outcome after coronary artery bypass grafting (CABG). **METHODS:** 1019 charts of first time isolated elective CABG patients was retrospectively reviewed from January 2006 to December 2008. We excluded patients undergoing urgent, emergency and off pump procedures. Data was analyzed on SPSS17. Logistic regression was applied to explore whether increased BMI is a predictor of in-hospital complications after CABG. **RESULTS:** Retrospective analysis of 1019 first time isolated elective CABG patients was performed. Out of them, 163(16.0%) patients had normal BMI (18.5 to 22.9 (kg/m²) while 856(84.0%) had increased BMI (\geq 23.0 (kg/m²). Operative profile shows that (888 (87.%) patients had three vessels coronary artery disease and (970 (95.2%)) got IMA grafts. Their 30-days mortality was 0.8%. The data showed patients with higher BMI tended to have increased postoperative complications. However multivariate analysis revealed age (adj OR: 1.04; 95%CI: 1.02, 1.06), hospital stay (adj OR: 1.07; 95% C.I: 1.04, 1.10), perfusion time (adj OR: 1.48; 95%CI: 1.05, 2.10) and renal failure (adj OR: 1.63; 95% C.I: 1.02, 2.59) as significantly associated with in hospital complications, while increased BMI remained insignificant at P value of \leq 0.05. Model was adequately fit at P=0.749 by Hosmer and Lemeshow test. **CONCLUSIONS:** This study concludes that increased BMI in itself is not a predictor of increased mortality and morbidity. Post-operative complications in first time isolated elective CABG patients is, in fact, associated with increasing age, hospital stay, perfusion time and renal failure.

PCV23

AWARENESS OF HYPERLIPIDEMIA AMONG UNIVERSITY STUDENTS AND STAFF MEMBER

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OBJECTIVES: To evaluate the awareness of hyperlipidemia among university students and university staff members and to identify respondent variables that affect hyperlipidemia knowledge level. **METHODS:** A survey was conducted to evaluate the awareness of hyperlipidemia among university students and faculty members. A validated questionnaire was used to assess knowledge of factors that are responsible for hyperlipidemia, knowledge of food that was responsible for hyperlipidemia and the knowledge regarding hyperlipidemia medicine. Respondent variables were associated with their knowledge level and were evaluated through SPSS version 20. **RESULTS:** Of the 205 respondents, 91 (44.2%) were male and 114 (55.8%) were females with a mean age of 26.8 years (SD 0.6). One hundred and thirty (63.6%) of respondents were students whereas 75 (36.4%) respondents were university staff members. Almost half (49.5%) of respondents BMI was normal (18.5–22.5) followed by pre-obese (25.7%) and obese (12.1%). One hundred and forty three (69.4%) of respondents had adequate knowledge of factors responsible for hyperlipidemia, 190 (92.2%) had adequate knowledge of food responsible for hyperlipidemia, however only 7 (3.4%) respondents had adequate knowledge of hyperlipidemia medicine (HMG CoA reductase inhibitors). Respondent gender (p 0.004), education level (p 0.016) and occupation (p 0.001) had a statistically significant association with factors responsible for hyperlipidemia. Respondent's race (p 0.012) had a significant association with knowledge of food responsible for hyperlipidemia. Similarly, patient gender (p 0.046) and occupation (p 0.041) had significant association with knowledge of hyperlipidemia medicine. **CONCLUSIONS:** Awareness of hyperlipidemia was adequate among university students and staff members however awareness of hyperlipidemia medicine was inadequate. Regular seminars and workshops can help create awareness among different aspect of hyperlipidemia.

CARDIOVASCULAR DISORDERS – Cost Studies

PCV25

BUDGET IMPACT OF LEFT ATRIAL APPENDAGE OCCLUSION IN PATIENTS WITH ATRIAL FIBRILLATION CONTRAINDICATED TO ANTICOAGULATION

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OBJECTIVES: Stroke is a leading public health problem in terms of mortality and economic burden in Korea. Anticoagulants are the mainstay for ischemic stroke prevention in atrial fibrillation (AF), but many patients have contraindications to these drugs. A number of catheter-based left atrial appendage occlusion (LAAO) devices devised to eliminate the major cause of thromboembolism in AF patients have been commercialized in Europe but are not yet available in Korea. The purpose of this study is to perform a budget impact analysis of LAAO in patients with AF contraindicated to anticoagulation. Such analysis could help decision makers assign greater priority to stroke prevention in Korea. **METHODS:** A budget impact model (BIM) was developed based on the number of ischemic strokes and deaths prevented by LAAO. LAAO was compared to no stroke prevention since AF patients contraindicated to anticoagulation have no other alternatives. Sensitivity analyses on clinical and cost inputs were performed. **RESULTS:** LAAO demonstrated a benefit in terms of ischemic strokes and mortality avoided. The BIM was most sensitive to the patients' baseline stroke risk factors, the treatment effect of LAAO, the cost of stroke management and the cost of the LAAO procedure. For instance, in high stroke risk patients with CHADS₂VASc score \geq 6 one stroke can be avoided within five years by LAAO performed in just three patients. LAAO can become cost saving after three years post LAAO procedure assuming that the cost of LAAO procedure is approximately 15,000,000, the total cost of stroke defined as direct and indirect cost in the first year is approximately 31,000,000 and the total cost in each subsequent year is approximately 12,500,000. **CONCLUSIONS:** This analysis highlights that LAAO can be a cost saving stroke prevention therapy in anticoagulation intolerant AF patients in medium to long term post LAAO procedure.

PCV26

MEDICAL COSTS OF CARDIOVASCULAR DISEASES IN TAIWAN

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OBJECTIVES: To examine the medical costs during the first and the 2nd year following the onset of cardiovascular diseases, i.e. myocardial infarction (MI), angina, stroke, coronary heart failure (CHF), or peripheral arterial disease (PAD). **METHODS:** The National Health Insurance Research Database (NHIRD), a nationwide population-based claims database, was used in the study. Patients who hospitalized with the principal diagnosis code of 410 for MI, 413 for angina, 430-434 for stroke, or 428 for CHF, or who had outpatient visits with the principal diagnosis of 443.9 for PAD during 2005-2009 were identified as study subjects. The initial date of the hospitalization/outpatient visit with the diagnosis code associated with each disease was defined as the index date. Patients who had outpatient visits or hospitalization with diagnoses of MI, angina, stroke, CHF and PAD within five years before the index date were excluded, except for patients who had outpatient visits within two weeks prior to the index date. Patients who withdrew from the health insurance program during the first and the 2nd year after the index date were also excluded. The generalized linear model was used to estimate medical costs associated with cardiovascular diseases within 1st year and 2nd year after the index date. All costs were inflated to 2011 dollars by using the medical care component of the Consumer Price Index. **RESULTS:** The 1st year average total medical costs associated with MI, angina, stroke, CHF, and PAD were NT\$293,995, NT\$60,305, NT\$141,086,

NT\$113,100, and NT\$6,556, respectively. The 2nd year average total medical costs associated with MI, angina and stroke were NT\$63,365, NT\$33,469 and NT\$52,513, respectively. **CONCLUSIONS:** Medical costs associated with cardiovascular diseases were substantial to the National Health Insurance program in Taiwan. These results indicate potential benefits from interventions aimed at preventing the risk factors of cardiovascular diseases such as hypertension, hyperlipidemia, and hyperglycemia.

PCV27

EXAMPLE OF ANALYSIS UTILIZING REAL WORLD DATA: MEDICAL COST REDUCTION BY ADVISING UNTREATED-HYPERTENSION PATIENTS TO VISIT DOCTORS

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OBJECTIVES: We define patients who have not consulted doctors to treat their hypertension, while they have learned their blood pressure levels are high through health check-up, as untreated-hypertension patients. Our research objective is to calculate using real world data how much lower the medical cost would be if the untreated-hypertension patients visit doctors in response to suggestions to which represents the cost reduction of cost-effectiveness analysis. **METHODS:** We used the data of Japan Medical Data Center (JMDC), which provides health insurance claims data with linked health check-up data of 1.7 million members from health insurance societies in Japan. **RESULTS:** It is estimated there are around 705 untreated-hypertension patients in a virtual (yet supposed-to-be typical according to the JMDC data) health insurance society with 10,000 members. They would leave their conditions as they are for an average of 6 years knowing that their blood-pressure levels are high. It is necessary to advise untreated-hypertension patients to visit doctors for treatment. Such advices should be able to start their hypertension treatment in early stages and prevent them from future complicating diseases. According to our calculation, the medical cost after taking antihypertensive would increase by 11% without aging factors by leaving their untreated-hypertension conditions for one year. **CONCLUSIONS:** If the virtual health insurance society had all the existing patients with mid-level (160/100 or higher) high blood pressures visit doctors right now, their monthly medical cost would be 0.71 million yen lower against the amount they had to pay in the future (averagely in 3 years) if they continue to avoid visiting, which represents 71 yen a month per member, and had all the existing patients with mid-level high blood pressures visit doctors retrospectively, its monthly medical cost would have been 0.52 million yen lower now. This amount represents 52 yen a month per member.

PCV28

ANTITHROMBOTIC THERAPY AND DIRECT MEDICAL COSTS IN PATIENTS WITH ACUTE CORONARY SYNDROME IN SHANGHAI, CHINA

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OBJECTIVES: Acute coronary syndrome (ACS) is a leading cause of morbidity and mortality worldwide. This study aims to describe treatment patterns and disease burden for patients with ACS in Shanghai, China. **METHODS:** A retrospective descriptive cohort study was conducted. Data were obtained from electronic medical records of seven major Shanghai medical centers. Patients who had at least one primary diagnosis of ACS between January 2006 and July 2012 were included in the study. Patient ACS-related antithrombotic medication use, laboratory tests, key comorbidities, health care utilization and direct medical costs were examined. Log-linear regression was conducted to explore the factors associated with total direct medical cost. **RESULTS:** A total of 6,601 patients were included with mean age of 69.7 (±SD12.5), 73% male and 10% mortality rate. 18.2% of studied patients had diabetes as a comorbidity, 21.2% had hypertension, and 8.6% had hyperlipidemia. 6,466 (98.0%) of patients had been hospitalized for ACS with mean 14.0 (±16.4) days per hospitalization. There were 1,022 patients (15.5%) presented to emergency department. Of those, 93.5% received any antithrombotic therapy, including 92.8% with antiplatelet agents and 20.8% with anticoagulants. The ACS-related direct medical costs were RMB19,421 (±24,741) per hospitalization with medication of RMB6,798 and lab tests of RMB1,355, and RMB2,894 (±7,060) per outpatient visit with medication of RMB624 and lab tests of RMB464. The higher direct medical cost was associated significantly ($p < 0.01$) with aging, being male, antiplatelet and anticoagulant uses, diabetes, stroke, hyperlipidemia, hypertension, and chronic kidney diseases. **CONCLUSIONS:** Antithrombotic therapeutic treatments were commonly used among ACS patients in Shanghai, China. ACS poses significant disease burden to the health care system and patients. The higher treatment cost for patients with ACS involves antithrombotic use and key comorbidities.

PCV29

HOW LIKELY WARFARIN PHARMACOGNETIC TEST TO BE COST-EFFECTIVE IN THAILAND: A THRESHOLD ANALYSIS

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OBJECTIVES: Our economic evaluation of warfarin pharmacogenetic (PGx) test revealed that the test was not cost-effective in Thailand, based on input parameters derived from a meta-analysis of Caucasians-dominant studies for the relative risk (RR) of major bleeding in variant genotypes of CYP2C9 [2.19, 95%CI (1.33-3.60)] and VKORC1 [1.08, 95%CI (0.55-2.10)]. Considering this limitation and the high prevalence of VKORC1 variant genotype in Thailand, this study aimed to determine the threshold value of the RR of major bleeding for VKORC1 variant genotypes leading PGx test to be cost-effective. **METHODS:** We conducted a literature search for local and international publications investigating the relationship of VKORC1

genotype and the risk of major bleeding in warfarin users. Additionally, interviews with local key cardiologists were undertaken. A threshold analysis was performed for patients aged 45 years old using the previously constructed decision analytic model. The model was populated from the societal perspective. Input data were obtained from literature review, meta-analysis, and electronic hospital database analyses. Incremental cost-effectiveness ratios (ICERs) were presented as year 2013 values. **RESULTS:** Literature search and interviews identified no local evidence on the relationship of VKORC1 genotype and the RR of major bleeding in warfarin users. In base-case analysis, PGx results in 0.00198 QALY gained, and increases costs by 2,953.23 THB (98.44 USD) compared with UC (ICER 1,494,707.9 THB [49,823 USD] per QALY gained). In order for the PGx test to be cost-effective, the RR for major bleeding in VKORC1 variant genotype needs to be shifted from 1.08 (base-case) to 4.15. **CONCLUSIONS:** Our finding suggests that PGx-guided warfarin dosing is not a cost-effective intervention in Thailand due to low likelihood of the RR for major bleeding in VKORC1 variant genotype to be as high as 4.15. This evidence can be used to assist policy makers and clinicians in efficiently allocating limited resources.

PCV30

COST-EFFECTIVENESS OF TREATING ACUTE CORONARY SYNDROME PATIENTS WITH RIVAROXBAN IN AUSTRALIA

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OBJECTIVES: Rivaroxaban is a new oral anticoagulant subsidised on the Australian Pharmaceutical Benefits Scheme (PBS) for prevention of stroke or systemic embolism in patients with non-valvular atrial fibrillation or undergoing hip and knee replacement. Recent randomized controlled trials (RCTs) have demonstrated its efficacy and safety in treating patients with acute coronary syndrome (ACS). The aim of this study was to assess the long-term cost-effectiveness of treating patients with ACS with rivaroxaban for a 12 month period and modelling the lifetime costs and benefits from a third party payer perspective. **METHODS:** A two-part decision model was constructed to compare treatment with rivaroxaban or current treatment for patients with ACS. The first part was a decision-tree model comprising four health states (no event, non-fatal MI, non-fatal stroke, death) adopted to simulate treatment outcomes based on the event rates reported in the RCTs) health care costs (PBS, hospital cost weights) and quality of life weights (from published literature) for 12 months. Beyond 1-year, treatment outcomes were estimated via a Markov model, with lifetime costs, and quality adjusted life years (QALYs) estimated for both arms and an incremental cost-effectiveness ratio (ICER) estimated. A series of sensitivity analyses were performed to test the robustness of the result. **RESULTS:** One-year treatment with rivaroxaban was associated with both incremental cost and QALY (AUD 30688 vs. 30101, 17.51 vs. 17.39 for rivaroxaban and placebo respectively) over lifetime horizon in the baseline analysis. The ICER of rivaroxaban comparing to placebo was AUD 4896 per QALY gained. The probabilistic sensitivity analysis varying the event transition probability also showed consistent results. **CONCLUSIONS:** Based on clinical and health economic evidence, treating ACS patients with rivaroxaban for 12 months was associated with an ICER of AUD 4896/QALY, which is below the Willingness-to-pay per QALY threshold in Australia inferred from published literature.

PCV31

COST-EFFECTIVENESS OF CLOPIDOGREL-ASPIRIN VERSUS ASPIRIN ALONE FOR ACUTE TIA AND MINOR STROKE

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OBJECTIVES: Treatment with the combination of clopidogrel and aspirin taken soon after a transient ischemic attack (TIA) or minor stroke was shown to reduce the 90-day risk of stroke in a large trial in China, but the cost-effectiveness is unknown. This study sought to estimate the cost-effectiveness of clopidogrel-aspirin regimen for acute TIA or minor stroke. **METHODS:** A Markov model was created to determine the cost-effectiveness of treatment of acute TIA or minor stroke patients with clopidogrel-aspirin compared with aspirin alone. Inputs for the model were obtained from clinical trial data, claims databases, and the published literature. The main outcome measure was cost per quality-adjusted life-years (QALYs) gained. One-way and multivariable probabilistic sensitivity analyses were performed to test the robustness of the findings. **RESULTS:** Compared to aspirin alone, clopidogrel-aspirin resulted in a lifetime gain of 0.037 QALYs at an additional cost of CNY 1250 (US\$ 192), yielding an incremental cost-effectiveness ratio of CNY 33,800 (US\$ 5200) per QALY gained. Probabilistic sensitivity analysis showed that clopidogrel-aspirin therapy was more cost-effective in 95.7% of the simulations at a willingness-to-pay threshold recommended by the World Health Organization of CNY 105,000 (US\$ 16,200) per QALY. **CONCLUSIONS:** Early 90-day clopidogrel-aspirin regimen for acute TIA or minor stroke is highly cost-effective in China. If clopidogrel were generic, treatment with clopidogrel-aspirin would have been cost saving.

PCV32

COST-EFFECTIVENESS ANALYSIS OF FONDAPARINUX VERSUS ENOXAPARIN IN NON-ST ELEVATION ACUTE CORONARY SYNDROME IN THAILAND

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OBJECTIVES: Non-ST elevation acute coronary syndrome (NSTEMI-ACS) imposes significant health and economic burden to Thai society. Anticoagulants are recommended as standard therapy by various clinical practice guidelines. With the advent of a new anticoagulant, therefore, this study aimed to determine the cost-effectiveness of fondaparinux versus enoxaparin in the treatment of NSTEMI-ACS in Thailand. **METHODS:** A two-part construct model composing of a one-year decision tree and a Markov model was developed to capture short and long-term costs and outcomes with the perspective of provider and society. Effectiveness data were derived from OASIS-5 trial while bleeding rates were derived from the Thai Acute Coronary Syndrome Registry (TACSRS),