ANTI-GLYCEMIC MEDICATION TREATMENT PATTERNS AMONG TYPE II DIABETES MELLITUS PATIENTS INITIATING LIPID-ALTERING REMEDIES

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OBJECTIVES: To evaluate changes in anti-glycemic treatment patterns in patients newly initiating statin therapy with niacin extended-release (NER-S), relative to patients initiating alternative lipid regimens. METHODS: An observational cohort study was conducted using integrated administrative claims and laboratory result data within the HealthCore Integrated Research Database. T2DM patients aged 18 to 64 initiating statin-agonizing therapy (NER-S, ezetimibe (EZE-S), or fenofibrate (FFB-S)) were identified between 1/1/2005-11/30/2008 (index date) were included. Patients with >12 months of pre-index eligibility and ≥1 laboratory result for hemoglobin A1c (HbA1c) within the 12-month period were included. The utilization and average daily dose (ADD) of anti-glycemic medications during the 12-month pre-index and follow-up period were compared between cohorts. RESULTS: A total of 42,250 patients were identified: 2,041 NER-S, 6,915 EZE-S, 3,095 FFB-S, and 30,199 SM. Compared to each cohort, NER-S patients were more likely to be male (P<0.0001), and have higher prevalence of pre-existing ischemic heart conditions (P<0.0001). NER-S patients had lowest index LDL-C (79.3±20.8; P<0.0001), second lowest LDL-C (93.7±38.4), and second highest TG (245.3±307.0) prior to the index date. Among oral anti-glycemic therapies, NER-S patients were observed to have the largest decrease in ADD (mg/day) for biguanides (metformin: -155 9 ± 788.0 mg/day), thiazolidinediones (glimepiride: -0.1 ± 0.9 mg/day, pioglitazone: -20.8; P<0.001), and incretin mimetic agents (exenatide: -0.1 ± 3.5; P<0.001) from pre-index to follow-up. Furthermore, NER-S patients had the smallest increase in ADD of DPP-4’s (sitagliptin: 0.3 ± 17.6; P = 0.046) and GLP-1’s (liraglutide: -0.6 ± 17.8; P=0.002). CONCLUSIONS: Despite studies indicating the potential for NER-S to antagonize glycemic control among T2DM patients, patients initiating NER-S were observed to have decreased utilization and average daily dose of anti-glycemic medications, relative to alternative treatment regimens.

DIABETES MELLITUS PATIENTS INITIATING LIPID-ALTERING REGIMENS

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OBJECTIVES: To compare medication treatment and 12-month outcomes of patients aged <75 years undergoing percutaneous coronary intervention (PCI). METHODS: Data were drawn from the National Cardiovascular Network (PCV) register (2005-2011) for PCI patients. Baseline cardiovascular risk using the Archimedes Model was used to simulate head-to-head clinical trials in several populations based on 10-year Framingham risk score (FRS) criteria (<10, 10-20, >20) and EuroSCORE (<5, ≥5) to estimate the occurrence of MACE (PCI, MI, stroke, and cardiovascular death). Simulated patients ages 45-70 with FRS ≤5% were drawn from the National Health and Nutrition Examination Survey. Treatment models were based on biomarker and outcomes data from published trials. RESULTS: The patients numbers in each FRS and EuroSCORE level population was 49,966 and 26,100, respectively. In the 12-month follow up were included. 10 selected trials were combined using mixed treatment comparisons (MTC). RESULTS: The 5-year relative risk (RR) of MACE for R20 versus A40 was approximately 0.9, irrespective of baseline risk. The 5-year RR of MACE for R20 versus A80 ranged from 0.92 to 0.94, and for R40 versus A80 it was 0.88 to 0.90. RR estimates were similar at 10 and 20 years; however, NNT decreased over time. CONCLUSIONS: The Model estimated that R20 lowers the risk of MACE more than A40 or A80, and R40 further lowers risk compared with A80. The estimated absolute risk reduction with rosuvastatin was greater with higher baseline risk and over time. While simulation models cannot replace controlled clinical trials, this study highlights the potential of using rigorous modeling approaches to bridge evidence gaps.

MIXED TREATMENT COMPARISON OF DRONEDARONE, AMIODARONE AND SOTALOL FOR THE MANAGEMENT OF ATRIAL FIBRILLATION IN AUSTRALIA

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OBJECTIVES: To compare the relative efficacy and tolerability of amiodarone, sotalol and dronedarone for the treatment of atrial fibrillation (AF) in Australia using mixed treatment comparisons (MTC). METHODS: There are limited data directly comparing the safety and effectiveness of dronedarone with the alternatively used antiarrhythmic drugs (AADs) in Australia. In the absence of direct comparisons, we have performed an MTC of networks of trials in order to provide best estimates of the relative effectiveness and safety of the alternative AADs. This approach was previously used by Freemantle et al (2011) to compare dronedarone not only with amiodarone and sotalol, but also with flecainide and propafenone. As flecainide and propafenone are no longer widely used in Australia, we chose to exclude them from the current literature. Analysis in AF involving amiodarone, dronedarone, sotalol or placebo was searched systematically. The 10 selected trials were combined using MTC models to provide direct and indirect comparisons in a single analysis. Randomized trials with at least one month of treatment and at least 3 months follow up were included. RESULTS: Results are presented versus placebo. Trends towards increased mortality for sotalol (OR 4.67, 95% CI 1.89 – 11.57) and amiodarone (OR 2.92, 95% CI 1.17 – 7.31) were found. Conversely, a trend towards decreased mortality in the dronedarone group was observed. CONCLUSIONS: Using an MTC approach of the AADs available in the Australian clinical setting, we have shown that dronedarone is associated with a decrease in the risk of all-cause mortality, and amiodarone and sotalol are associated with an increase in the risk of all-cause mortality.
OBJECTIVES: To evaluate doctors’ adherence to Malaysian Clinical Practice Guidelines (CPG) 2008 in patients with cardiovascular disease, and factors associated with guidelines adherence and hypertension control. METHODS: This was a cross sectional study conducted at Penang Hospital. A total of 13 doctors practicing in the clinic were selected by simple random written with a doctor to 25 established hypertensive patients with cardiovascular disease (total 325) were noted on visit 1 along with patients’ demographic and clinical data. Implicit review of patients’ medical record was conducted to find acceptable rationale for nonadherence to guidelines. The prescriptions written were categorized either as compliant or non-compliant to CPG (2008). Two hundred sixty of the enrolled 320 patients (20 out of 25 patients enrolled per doctor) were followed for another one visit. Blood pressure readings noted on visit 2 were related to prescriptions written on visit 1. SPSS 16 was used for data analysis. RESULTS: One hundred ninety-one (73.5%) patients received guideline compliant pharmacotherapy. CPG compliance had statistically significant weak negative association with left ventricular hypertrophy (LVH) (P = 0.241, P = 0.01) and diabetes (P = 0.228, P = 0.01). One hundred fifty-four (59.2 %) patients were on goal BP. Hypertension control had statistically significant weak positive association with guidelines adherence (P = 0.175, P = 0.01), and Angiotensin converting enzyme inhibitors (P = 0.195, P = 0.01), while weak negative association with diabetes mellitus (P = 0.148, P = 0.017), left ventricular hypertrophy (LVH) (P = 0.153, P = 0.017) and monotherapy (P = 0.168, P = 0.01) CONCLUSIONS: Adherence to guidelines resulted in better hypertension control. Overall prescribing practices were in fair compliance with guidelines but room for further improvement is still present. Doctors’ poor adherence to guidelines in patients with diabetes mellitus and LVH needs further probing and focus in future.

PCV6 GUIDELINES ADHERENT PHARMACOTHERAPY RESULTED IN BETTER HYPERTENSION CONTROL
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OBJECTIVES: To evaluate impact of guidelines adherence and factors associated with hypertension control. METHODS: This was a cross sectional study conducted at Penang Hospital. Twenty-six doctors; 13 from cardiology, 5 from nephrology and 8 from diabetes were enrolled in the study. Prescriptions written by each doctor to 25 established hypertensive patients (total 650) were noted on visit 1 along with patients’ demographic and clinical data. Implicit review of patients’ medical record was conducted to find acceptable rationale for nonadherence to guidelines. The prescriptions written were categorized either as compliant or non-compliant to guidelines. CPG adherence had statistically significant weak negative association with left ventricular hypertrophy (LVH) (P = 0.241, P = 0.01) and diabetes (P = 0.228, P = 0.01). One hundred fifty-four (59.2 %) patients were on goal BP. Hypertension control had statistically significant weak positive association with guidelines adherence (P = 0.175, P = 0.01), and Angiotensin converting enzyme inhibitors (P = 0.195, P = 0.01), while weak negative association with diabetes mellitus (P = 0.148, P = 0.017), left ventricular hypertrophy (LVH) (P = 0.153, P = 0.017) and monotherapy (P = 0.168, P = 0.01) CONCLUSIONS: Adherence to guidelines resulted in better hypertension control. Overall prescribing practices were in fair compliance with guidelines but room for further improvement is still present. Doctors’ poor adherence to guidelines in patients with diabetes mellitus and LVH needs further probing and focus in future.

PCV7 COST-EFFECTIVENESS ANALYSIS OF BOSENTAN AND SILDENAFIL COMPARED WITH STANDARD THERAPY IN TREATMENT OF PRIMARY PULMONARY ARTERIAL HYPERTENSION IN RUSSIAN FEDERATION
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OBJECTIVES: To conduct cost-effectiveness analysis of bosentan and sildenafil compared with standard therapy (ST, i.e. calcium channel blockers and warfarin) in treatment of primary pulmonary arterial hypertension (PPAH) in Russian Federation. METHODS: We undertook cost-effectiveness analysis of bosentan (62.5 mg bid during first 4 weeks and 125 mg bid further) and sildenafil (25 mg tid) and estimated incremental cost-effectiveness ratios (ICER) for each drug vs ST. A cohort of 20 patients with PAH, functional class (FC) II was simulated in a model. The patients either received bosentan + ST, or sildenafil + ST, or ST only. The number of patients whose health state improves by one FC was considered a criterion of efficacy. Costs of hospitalization, standard therapy medications, and investigations associated with each patient were included in the model. Data on clinical efficacy of bosentan, sildenafil, and ST were extracted from clinical trials. This model was considered in the model was based on the results of peer interview. RESULTS: In our model treatment with bosentan was the most expensive: 9 of 20 patients versus 6 and 2 of 20 patients who had improved by one FC with bosentan, sildenafil, and ST, respectively. Also, the highest overall costs were in the bosentan group: 1,163,948 USD per 20 patients per year. Overall costs in case of sildenafil and standard therapy were 724,520 and 57,969 USD per group per year, respectively. However, comparison of bosentan with ST yielded lower ICER than comparison of sildenafil with ST, at 166,638 USD per one patient with improvement by one FC, respectively. Trend in the results remained the same with bosentan price up to 4400 USD per pack in one-way sensitivity analysis. CONCLUSIONS: The results of this study suggest that treatment of FC III PAH with bosentan is more preferable than treatment with sildenafil.

PCV8 RELATIVE EFFICACY OF BIVALIRUDIN VS. HEPARIN ALONE IN STEMI PATIENTS TREATED WITH PRIMARY PCI – AN INDIRECT TREATMENT COMPARISON
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OBJECTIVES: To evaluate doctors’ adherence to guidelines, by means of an indirect treatment comparison (ITC), the efficacy and safety of a bivalirudin-based antiocoagulation strategy to monotherapy in patients with ST-elevation myocardial infarction (STEMI) intended for primary percutaneous coronary intervention (PPCI). METHODS: A systematic review and meta-analysis was performed. Ten randomized controlled trials (RCTs) to build a network of bivalirudin and heparin monotherapy strategies in STEMI patients using a common reference strategy (heparin with glycoprotein IIb/IIIa inhibitor (GPI) or heparin without GPI). Identified studies were fixed and random effects Bayesian ITC. A base-case analysis was constructed from intention-to-treat populations in the RCTs. Outcomes (mortality, stroke, MI, ischaemic target vessel revascularisation (TVR), major adverse cardiovascular events, TIMI 0-3 major and minor bleeding) were evaluated at 30-days and 1-year result. RESULTS: Eight RCTs were identified for inclusion in the ITC. At 30-days the bivalirudin-based strategy was expected to result in fewer deaths (odds ratio [OR]=0.55; credible interval [CrI]=0.32-0.95) compared to a heparin monotherapy, which was sustained at 1-year (OR=0.53, CrI=0.31-0.91). Eighteen outcomes (stroke (OR=0.88; CrL=0.37, 2.13); MI (OR=0.79, CrL=0.45, 1.55); TVR (OR=0.75; CrL=0.38, 1.46); TIMI-major and minor bleeding) were evaluated at 30-days and 1-year result. CONCLUSIONS: For STEMI patients intended for PPCI, a bivalirudin-based strategy resulted in fewer deaths at 30-days and 1-year, compared to using heparin monotherapy. Other ischaemic and bleeding outcomes also tended towards improvement with bivalirudin.

PCV9 PRESCRIPTION OF ANGIOTENSIN CONVERTING ENZYME INHIBITORS AND HYPERTENSION CONTROL IN DIABETIC HYPERPENITIVE PATIENTS
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OBJECTIVES: To evaluate prescription of guidelines recommended Angiotensin converting enzyme inhibitors (ACE inhibitors) to established diabetic hypertensive patients, and factors associated with prescription of ACE inhibitors and hypertension control. METHODS: This was a cross sectional study conducted at Penang hospital. Prescriptions written to enrolled 25 established diabetic hypertensive patients were noted on visit 1 along with demographic and clinical data. Implicit review of the patients’ medical record was conducted to find acceptable rationale for non prescription of ACE inhibitors. The enrolled patients were followed for another one visit and their blood pressure (BP) readings noted on visit 2 were related to prescriptions written on visit 1. Data was analyzed by SPS 16. RESULTS: Two hundred fifty five (86%) patients had multiple comorbidities. The most prevalent comorbidity was cardiovascular disease (55.6%). Twenty six sixteen patients (86.4%) were on polytherapy. ACE inhibitors were the most commonly prescribed antihypertensive prescribed to 158 of 255 patients (61.6%) patients. Beta blockers prescribed to 154 of 61.6% patients. Ninety-two (36.8%) patients were not on ACE inhibitors, among whom only 8 (8.6%) had contraindications to its use, and 12 (15%) had diabetic nephropathy and were on guidelines recommended Angiotensin receptor blockers. Chronic kidney disease had statistically significant weak negative association with prescription of ACE inhibitors (P = 0.13, P = 0.03). One hundred nine (43.6%) patients were on goal BP on visit 2. Hypertension control had statistically significant moderate positive association with the use of ACE inhibitors (P=0.26, P=0.03), and weak positive association with use of aldosterone antagonists (P=0.13, P=0.04), polytherapy (P=0.17, P=0.01), cardiovascular disease (P=0.13, P=0.03) and male gender (P=0.13, P=0.03). CONCLUSIONS: Despite of