to apixaban. One-way and probabilistic sensitivity analyses indicated that model conclusions were robust over a wide range of inputs. **CONCLUSIONS:** Apixaban appears to be a dominant alternative to LMWH/edoxaban for the treatment and prevention of VTE.

PCV14

REAL-WORLD EFFECTIVENESS OF AMLODIPINE/VALSARTAN/HYDROCLOROTHIAZIDE SINGLE-PILL COMBINATION IN THE TREATMENT OF PATIENTS WITH ESSENTIAL HYPERTENSION

Viriato D[1], Antunes M[2]

[1]*Novartis Farma – Produtos Farmacêuticos S.A., Porto Salvo, Portugal,* [2]*Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal*

OBJECTIVES: Uncontrolled hypertension remains a major problem for health care systems worldwide, being strictly related to a persistently elevated burden of cardiovascular morbidity and mortality. Because of the multifactorial nature of hypertension, most patients require combination therapy to achieve blood pressure (BP) control. This analysis aimed to further investigate the effectiveness of amlodipine/valsartan/hydrochlorothiazide (A+V+H) single-pill combination in lowering the BP of hypertensive patients, previous assessed in an observational study. **METHODS:** This analysis was based on a data registry collected in a prospective, open-label, observational study conducted in 7132 patients diagnosed with essential hypertension and for whom treatment with A+V+H was indicated according to clinical practice. The observational period was 3 months. Descriptive analysis, hypothesis testing and linear regression models were performed. **RESULTS:** The reduction in systolic blood pressure (RSP) between baseline and last visit was 23.73±17.51 (mean±SD) while the reduction in diastolic blood pressure (RDP) was 11.34±10.63 mmHg (mean±SD). A t-test showed that both reductions are statistically significant ($p<<0.001$). Multiple linear regression models were fitted to RSP and RDP, to assess the influence of patients' characteristics, comorbidities and previous treatment ($R2 = 0.11$ and 0.13, respectively). **CONCLUSIONS:** Although significant, the model covariates were not sufficient to explain the reduction in SP and DP (11% and 13% explained, respectively) found between the baseline and last visit. Since most of the variables known as relevant to characterize hypertension were included in the study, the results allow to conclude that reduction found is mainly explained by the treatment with A+V+H single-pill combination.

PCV15

A MIXED TREATMENT COMPARISON (MTC) TO COMPARE THE EFFICACY OF ANTI-THROMBOTIC AGENTS IN TREATMENT AND SECONDARY PREVENTION OF VENOUS THROMBOEMBOLISM (VTE) IN PATIENTS WITH DEEP VEIN THROMBOSIS (DVT)

Edwards SJ, van Velthoven MH, Crawford F

BMJ, London, UK

OBJECTIVES: New oral anticoagulants (NOACs) are available for the treatment and prevention of VTE, but evidence on their clinical effectiveness compared with existing treatments is limited. We compared the clinical effectiveness of edoxaban, dabigatran and rivaroxaban using adjusted standard dose warfarin (warfarin) as a common comparator in patients with index DVT. This research was conducted during a review of the company's submission (CS) to the National Institute for Health and Care Excellence (NICE) Single Technology Appraisal programme for the oral direct factor Xa inhibitor, edoxaban. **METHODS:** Randomised controlled trials (RCTs) for inclusion were identified using the CS for edoxaban (as part of Technology Appraisal [TA] 662). We assessed RCTs for comparability based on patient population, disease severity, and treatments received. We conducted a Bayesian MTC and explored fixed and random effects models. Odds ratio (OR) was the summary statistic for VTE recurrence and major bleed. **RESULTS:** The network of five RCTs formed a "radiating star". The Deviance Information Criterion (DIC) and the residual deviance with the number of unconstrained data points for both outcomes showed fixed and random effects models were an equally good fit. Due to the small number of studies and the shape of the network, the results from the fixed effects model are presented. Results compared to warfarin were (OR>1 favours warfarin): VTE recurrence edoxaban OR 0.95 (95% Credible Interval [95%CrI]: 0.62–1.40), dabigatran OR 1.27 (95%CrI: 0.78–1.97), rivaroxaban OR 0.64 (95%CrI: 0.40–0.96); major bleed edoxaban OR 0.84 (95%CrI: 0.48–1.35), dabigatran OR 0.83 (95%CrI: 0.50–1.31), rivaroxaban OR 0.92 (95%CrI: 0.37–1.90). **CONCLUSIONS:** Rivaroxaban demonstrated a 36% reduction in risk of VTE recurrence compared to warfarin that was statistically significant at the 5% level. We did not identify other significant differences either when comparing NOACs to warfarin or when comparing NOACs with each other.

PCV16

COMPARATIVE EFFECTIVENESS OF TICAGRELOR VS. PRASUGREL IN PATIENTS WITH ACUTE CORONARY SYNDROME

Kim K, Lee TA, Ardati AK, Didomenico RJ, Touchette D, Walton SM

University of Illinois at Chicago, Chicago, IL, USA

OBJECTIVES: Randomized controlled trials have provided evidence that both prasugrel and ticagrelor can reduce complications in patients with acute coronary syndrome (ACS). However, no head-to-head comparisons were performed between these third-generation drugs. The aim of this study was to compare the hospital admission rates between patients receiving ticagrelor and prasugrel during post percutaneous coronary intervention (PCI). **METHODS:** A Retrospective cohort study was designed to compare all cause hospitalization over 365 days post PCI discharge. Patients who received PCI with an ACS hospitalization between January 2012 to December 2013 were extracted from the Truven Health Analytics MarketScan database. Eligible patients filled either a prasugrel or ticagrelor prescription within 14 days from the discharge date. To be included in the analytic cohort, patients needed to be continuously enrolled in the data over six-months prior to the index admission, and comorbid conditions over that period were assessed using Chi-square and Student t- tests for categorical and continuous variables, respectively. The effect of the selection of P2Y12 drugs on the time-to-first hospital re-admission was determined using a Cox-proportional hazard regression model. We controlled for potential confounders whose p-values at the baseline comparison were less than 0.1. **RESULTS:** A total of 9698 patients received PCI with a primary diagnosis of ACS, and started prasugrel (n=7095) or ticagrelor (n=2603). The ticagrelor treated group was older and more likely to have a diagnosis of intracranial hemorrhage, cerebrovascular accident, cardiac disorders and renal disorders than the prasugrel group. The observed 365-day hazard ratio (HR) of re-admission for ticagrelor was 1.056 [95% CI: 0.867, 1.285] which was unchanged after controlling for the potential confounders (HR: 1.056 [95% CI: 0.867 – 1.286]). **CONCLUSIONS:** The selection of third-generation antiplatelet agents following PCI was not associated with a clinically or statistically significant reduction in hospital-readmission.

PCV17

CAN DATA SIMULATION HELP EVALUATE HTA OUTCOMES OVER TIME AND FACILITATE EARLY DECISION-MAKING? A CASE STUDY OF TICAGRELOR IN ACUTE CORONARY SYNDROME IN THE UK

Dequen P, Cooper NJ, Abrams K

University of Leicester, Leicester, UK

BACKGROUND: In October 2011, the National Institute for Health and Care Excellence (NICE) recommended the use of ticagrelor in adult patients presenting with acute coronary syndrome (ACS) in England and Wales. The relative effectiveness and cost-effectiveness of ticagrelor compared to clopidogrel—the current standard of care in the NHS—were based on results from one large multicentre study including over 18,000 ACS patients. Patients were recruited from October 2006 through to July 2008 and primary trial data analysis, published in September 2009, demonstrated that ticagrelor significantly reduced the rate of death, myocardial infarction (MI), and/or stroke versus clopidogrel. Delays in completing and reporting on RCTs can impede access to new valuable treatments; however, data simulation may allow for the continuous modelling of trial results and support early HTA submissions. **OBJECTIVES:** Using a data simulation approach to estimate the relative effectiveness of ticagrelor vs. clopidogrel from recruitment to final analysis, we explore whether a trial design with shorter follow-up or the publication of an interim analysis could have resulted in a positive NICE decision at an earlier time point. **METHODS:** Time-to-event data was extracted from published Kaplan-Meir curves and individual patient data was simulated assuming censoring and recruitment distributions. The relative effectiveness of ticagrelor was assessed as a continuum from 2006 to 2009; and the probability of ticagrelor being cost-effective in the UK was also evaluated over time using a trial-based economic model. **RESULTS:** Despite increased uncertainty around the probabilities of death, MI and stroke estimated from immature trial data; results suggest that ticagrelor was a cost-effective alternative to clopidogrel before the original completed 12 months follow-up. **CONCLUSIONS:** Data simulation allowed us to evaluate HTA outcomes prior to the original planned analysis which, in retrospect, could have led to an earlier NICE recommendation for ticagrelor in ACS.

PCV18

ASPIRIN VERSUS CLOPIDOGREL IN PATIENTS WITH ISCHEMIC STROKE: A COST AND EFFECTIVENESS COMPARISON FROM BEIJING MEDICAL INSURANCE DATABASE

Wen L[1], Wu J[2], Yang L[1]

[1]*Peking University, Beijing, China,* [2]*Bayer, Beijing, China*

OBJECTIVES: To compare the cost and effectiveness of aspirin and clopidogrel in ischemic stroke(IS) patients from data of Beijing medical insurance database. **METHODS:** We randomly selected 10% of patients diagnosed as IS the first time during January 2012- December 2012 and then followed their inpatient records and prescription records to September 2013 from Beijing urban employees and residents medical insurance database. We divided these patients into 5 groups according to their drug utilization records during the observation period. Patients were divided into 5 groups according to the proportion of aspirin prescription by 100.0%, 60.1-99.9%, 40.0-60.0%, 0-39.9% and 0(clopidogrel only). We compared the rate of recurrences, cost of anti-platelet drugs and rate of hemorrhage events in different drug utilization groups. The Kruskal-Wallis test and Bartlett's test were used in the analysis. **RESULTS:** 4301 patients were identified(age 68.29±13.94, male 63.19%), 1477 (34.34%) patients used aspirin only, 1938 (45.06%) patients used 60-100% aspirin, 465 (10.81%) patients used 40-60% aspirin, 335 (7.78%) patients used aspirin 0-40% and 86 (2.01%) patients used clopidogrel only. patients with only aspirin recurred less than patients with both aspirin and clopidogrel prescription, patients with 60-100% aspirin prescription recurred less than patients with less aspirin prescription. patients with aspirin prescription only spent less on anti-platelet drugs than that of patients with both aspirin and clopidogrel prescription($p<0.01$),. The rates of hemorrhage events for IS patients of different drug groups showed no significant difference($p>0.05$). **CONCLUSIONS:** IS patients used more aspirin for anti-platelet treatment. The cost of anti-platelet drugs and rate of recurrence of patients who used aspirin only was lower, while no significant difference was found in hemorrhage events rates among different drug groups.

PCV19

A MIXED TREATMENT COMPARISON (MTC) TO COMPARE THE EFFICACY OF ANTI-THROMBOTIC AGENTS IN THE ACUTE TREATMENT OF VENOUS THROMBOEMBOLISM (VTE) IN PATIENTS WITH ACTIVE CANCER

Edwards SJ, Wakefield V, Karner C

BMJ, London, UK

OBJECTIVES: New oral anticoagulants (NOACs) are available for the treatment and prevention of VTE but evidence on their clinical effectiveness compared with existing treatments is limited. This research compared the clinical effectiveness of dabigatran, rivaroxaban, adjusted standard dose warfarin (warfarin), and low molecular weight heparin (LMWH) in people with active cancer following VTE. This research was con-

ducted during a review of the company's submission (CS) to the National Institute for Health and Care Excellence (NICE) Single Technology Appraisal programme for the oral direct thrombin inhibitor, dabigatran. **METHODS::** Randomised controlled trials (RCTs) for inclusion were identified using the CS for dabigatran (as part of Technology Appraisal [TA]327), and two similar submissions for rivaroxaban (TA261 and TA287). RCTs were assessed for comparability based on patient population, disease severity, and treatments received. A Bayesian MTC was conducted, and fixed and random effects models were explored. Odds ratio (OR) was chosen as the summary statistic for VTE recurrence and major bleed. **RESULTS:** The network of 9 RCTs formed a "radiating star". The fixed effects model had the lowest deviance information criterion (DIC) for VTE recurrence and major bleed and so was chosen as the best-fitting model. There was reasonable agreement between the number of unconstrained data points and the residual deviance for both outcomes. Results compared to dabigatran were (OR>1 favours dabigatran): VTE recurrence LMWH OR 0.96 (95% Credible Interval [95%CrI]: 0.15–3.37), rivaroxaban OR 1.29 (95%CrI: 0.12–5.42), warfarin OR 1.87 (95%CrI: 0.31–6.45); major bleed LMWH OR 0.85 (95%CrI: 0.15–2.67), warfarin OR 0.74 (95%CrI: 0.15–2.15). No data were available on major bleed for rivaroxaban in people with active cancer. **CONCLUSIONS:** There were no significant differences in the outcomes evaluated. However, the available evidence suggests that LMWH may have the lowest risk of VTE recurrence in the treatments assessed.

PCV20

ASSOCIATION BETWEEN ADHERENCE TO EVIDENCE-BASED HEART FAILURE DRUG TREATMENT AND ONE-YEAR ALL-CAUSE HOSPITALIZATION AND ALL-CAUSE MORTALITY

Moisan J[1], Girouard C[1], Demers E[2], Perez-Herrera N[2], Zaour N[3], Grégoire J[1]
[1]*Laval University, Quebec, QC, Canada,* [2]*Centre de recherche du CHU de Québec, Quebec, QC, Canada,* [3]*Novartis Pharmaceuticals Canada Inc., Dorval, QC, Canada*

OBJECTIVES: To assess the association between adherence to heart failure (HF) evidence-based treatment (i.e. β-blocker + angiotension-converting enzyme inhibitor or angiotensin receptor blocker or hydralazine + isosorbide dinitrate), and 1) one-year all-cause hospitalization and 2) one-year all-cause mortality, among people newly diagnosed for HF. **METHODS:** We conducted two nested case-control studies using Quebec (Canada) medico-administrative data. We selected cases and controls in a cohort made of Quebec residents ≥ 18 years who had a first diagnosis of HF between 01/01/2000 and 12/31/2009 and who did not use HF evidence-based treatment before their diagnosis. Cases were those hospitalized or who died in the year after HF diagnosis. Each case was randomly matched to 4 to 10 controls using incidence density sampling. Adherence to HF evidence-based treatment was assessed using the proportion of days covered (PDC). Odds ratios (OR) were calculated using conditional multivariable logistic regressions. **RESULTS:** Among the 125,622 individuals in the cohort, 70,483 (56.1%) were hospitalized and 19,915 (15.9%) died during the first year after diagnosis. Only 7.5% of hospitalization cases, 9.5% of their controls, 6.9% of death cases and 11.6% of their controls had a PDC ≥ 80%. Compared to those with a PDC ≥ 80%, patients who had a PDC > 0% and < 80% (OR= 1.39 (95% CI=1.33-1.46) or a PDC = 0% (OR=1.53 (1.48-1.58) were more likely to be hospitalized within the first year after diagnosis. Similarly, compared to those with a PDC ≥ 80%, patients who had a PDC > 0% and < 80% (OR= 1.72 (95% CI=1.59-1.86) or a PDC = 0% (OR=2.26 (2.13-2.40) were more likely to die during the year after diagnosis. **CONCLUSIONS:** Adherence to HF evidence-based treatment is suboptimal. A low adherence could increase the risk of hospitalization and have a detrimental effect on survival of HF patients.

PCV21

SYSTEMATIC REVIEW AND META-ANALYSIS OF SELF-MONITORING AND SELF-MANAGEMENT OF ANTICOAGULATION THERAPY WITH VITAMIN K ANTAGONISTS

Locatelli I, Marjanovic I, Janzic A
University of Ljubljana, Faculty of Pharmacy, Ljubljana, Slovenia

OBJECTIVES: The introduction of prothrombin time (INR) point-of-care devices permits patient self-testing of the INR values and subsequently, also self-adjustment of the dosing regimen. The purpose of this systematic review was to evaluate recent findings regarding the effects of self-monitoring and self-management of anticoagulation therapy with vitamin K antagonists (coumarins) compared to the standard ambulatory care. **METHODS:** A comprehensive literature search using OVID MEDLINE (1946 – April 2015) and EMBASE (1974 – April 2015) databases was performed. Selection criteria were restricted to randomized controlled clinical trials evaluating self-monitoring or self-management with standard care as control. Meta-analysis was performed in Review Manager Computer program (Version 5.3.) using a fixed-effect model with the Mantel-Haenszel method to calculate the pooled risk ratios (RR) and their 95% confidence interval (CI) of the following clinical outcomes: thromboembolic events, major haemorrhage, and all-cause mortality. Potential heterogeneity was assessed with I2 statistics. **RESULTS:** In addition to the 2010 Cochrane review (Self-monitoring and self-management of oral anticoagulation), 10 novel randomized trials were identified; in 3 of them self-monitoring was evaluated, while in the other 7 studies self-management was assessed. Until the April 2015, self-monitoring and self-management was evaluated in 10 (4313 participants) and 19 (5413 participants) randomized trials, respectively. Self-management was associated with significant reductions in both thromboembolic events (RR=0.48, 95%CI: 0.35–0.65, p<0.001) and mortality (RR=0.70, 95%CI: 0.49–0.99, p=0.046), while no significant effect on major bleedings was found (RR=1.03, 95%CI: 0.77–1.38). In contrast to the 2010 Cochrane review no significant benefit of self-monitoring could be confirmed: the RRs were 0.91 (95%CI: 0.71–1.16), 0.91 (95%CI: 0.75–1.10), and 0.94 (95%CI: 0.75–1.17) for the thromboembolic events, major bleedings, and mortality, respectively. **CONCLUSIONS:** Compared to the standard ambulatory care, patient self-management of the INR values shows beneficial effects on their anticoagulant therapy. Moreover, self-management better improves the probability of the occurrence of thromboembolic events than self-monitoring.

PCV22

NETWORK META-ANALYSIS OF VARIOUS TREATMENT STRATEGIES IN RESISTANT HYPERTENSION

Makai P, intHout J, Grutters JP, Deinum J, Jenniskens K, van der Wilt GJ
Radboudumc, Nijmegen, The Netherlands

OBJECTIVES: Currently, the most commonly applied approach to treatment of resistant hypertension (TRH) is adding on mineralocorticoid receptor antagonists (MRAs) such as spironolactone to existing medication therapy. Newer treatment alternatives for treating resistant hypertension were developed, however comparative effectiveness of these add-on strategies and MRAs is not established. Our objective is to perform a network-meta analysis of add-on treatment alternatives for MRAs in TRHTN and thus establish comparative effectiveness in terms of SBP and DBP reduction. **METHODS:** Recent meta-analyses for renal denervation (RDN) and placebo effect were supplemented with a systematic search for MRAs in TRHTN. Newer renal denervation articles were identified using Pubmed searches. Search terms included Randomized control trials (RCT), TRH, MRAs. We Independently extracted data using a pre-defined data extraction form, including Cohrane study quality indicators and the GRADE criteria. Network meta-analysis techniques were used to compare the effects of add-on treatment alternatives for TRHTN, using spironolactone as a common comparator. **RESULTS:** We identified 16 articles which met our inclusion criteria. The results show that lack of add-on medication therapy leads to markedly higher blood pressure measurements than spironolactone, office SBP 24 [95% CI 2; 48] DBP 7.4 [-2.9; 18]. While add-on placebo medication results in significantly higher blood pressure than add-on spironolactone, SBP 19 [5.7; 32] DBP 8.3[2.3; 14], add-on spironolactone's blood pressure reducing effects equal those of add-on sham operations SBP 0.58 [-28; 29] DBP 0.36 [-12; 13]. **CONCLUSIONS:** Currently, no active, add-on treatment strategy for TRHTN seems more effective than spironolactone. In addition, being the only effective active treatment strategy, research into future medicinal alternatives in TRHTN should use spironolactone as an active comparison, and as an obligatory background drug when investigating the effectiveness of device-based alternatives. Furthermore, trials investigating device-based alternatives such as renal denervation should always include sham procedure as a comparator.

PCV23

ASPIRIN VERSUS CLOPIDOGREL IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION: A COST AND EFFECTIVENESS COMPARISON FROM BEIJING MEDICAL INSURANCE DATABASE

Wen L[1], Wu J[2], Yang L[1]
[1]*Peking University, Beijing, China,* [2]*Bayer, Beijing, China*

OBJECTIVES: To compare the cost and effectiveness of aspirin with that of clopidogrel in acute myocardial infarction(AMI) patients from data of Beijing medical insurance database **METHODS:** We randomly selected 10% of patients diagnosed as AMI the first time during January 2012- December 2012 and then followed their inpatient records and prescription records to September 2013 from Beijing medical insurance database. We divided these patients into 5 groups according to their drug utilization records during the observation period. 1239 patients were divided into 5 groups according to the proportion of aspirin prescription by 100.0%, 60.1-99.9%, 40.0-60.0%, 0-39.9% and 0(clopidogrel only). We compared the rate of recurrences, cost of anti-platelet drugs and rate of hemorrhage events in different drug utilization groups. The Kruskal-Wallis test and Bartlett's test were used in the analysis. **RESULTS:** 1239 patients were identified(age 65.69±15.51, male 73.69%), 63 (2.54%) patients used aspirin only, 761 (61.42%) patients used aspirin more(60-100%), 289 (23.33%) patients used 40-60% aspirin, 116 (9.36%) patients used aspirin 0-40% and 10 (0.83%) patients used clopidogrel only. The MI recurrence rates for patients of different prescription groups were significantly different(p<0.01), patients with only aspirin utilization recurred less than that of patients with 60-100% aspirin and 40-60% aspirin prescription, patients with 0-40% aspirin prescription recurred less than that of patients with 60-100% aspirin prescription. The cost of anti-platelet drugs for patients of different drug groups was significantly different(p<0.01), The hemorrhage rate of patients with only aspirin prescription was higher than that of patients with two drugs. **CONCLUSIONS:** A small proportion of AMI patients used only one drug for anti-platelet treatment, while most patients used both aspirin and clopidogrel. Patients who used aspirin only had lower cost of anti-platelet drugs, lower rate of recurrence and higher rate of hemorrhage events. Further studies on cost-effectiveness for aspirin and clopidogrel would provide moret evidence.

PCV24

LONG-TERM INCREASED INPATIENT AND OUTPATIENT VISITS ASSOCIATED WITH CARDIOVASCULAR EVENTS: A LARGE UNITED STATES REAL WORLD STUDY

Fox KM[1], Wang L[2], Quek RG[3], Gandra SR[3], Li L[2], Baser O[4]
[1]*Strategic Healthcare Solutions, LLC, Monkton, MD, USA,* [2]*STATinMED Research, Plano, TX, USA,* [3]*Amgen, Inc., Thousand Oaks, CA, USA,* [4]*STATinMED Research, Columbia University, New York, NY, USA*

OBJECTIVES: To evaluate the burden to patients and the healthcare system associated with a new cardiovascular event (CVEs) up to 3 years post-new CVE among high-risk hyperlipidemia patients. **METHODS:** Using the IMS LifeLink PharMetrics Plus commercial claims database, this retrospective cohort study included high CV risk hyperlipidemia patients with and without a new CVE between 01/01/2006 and 06/30/2012. CVEs included primary inpatient claims for myocardial infarction (MI), unstable angina (UA), ischemic stroke (IS), transient ischemic attack, revascularization and heart failure. Patients were stratified into two CV risk cohorts: history of cardiovascular disease (CVD) [MI, UA, coronary artery bypass graft, percutaneous coronary intervention, IS] and coronary heart disease risk equivalent (CHD RE) [peripheral artery disease, abdominal aortic aneurysm, coronary artery disease, diabetes, dyslipidemia]. Propensity score matching was applied to compare the burden among patients with and without a new CVE, ranging from 1 month through 3 years post-CVE date. **RESULTS:** Using the IMS LifeLink PharMetrics Plus commercial claims database, this retrospective cohort study included high CV risk hyperlipidemia patients