OBJECTIVES: To critically appraise the published network meta-analyses (NMAs) evaluating the efficacy or safety of the new oral anticogulants (NOACs) dabigatran, rivaroxaban and apixaban for the prevention of stroke in patients with non-valvular atrial fibrillation (AF). **METHODS:** A systematic literature review was performed to identify the relevant NMAs using MEDLINE®, EMBASE®, Cochrane Library, Database of Abstracts of Reviews of Effects, and Health Technology Assessment. The synthesis studies were evaluated using the 'Questionnaire to assess the relevance and credibility of the NMA'. **RESULTS:** Eleven NMAs evaluating NOACs among adults with non-valvular AF were identified. Most NMAs included three large phase III RCTs, comparing NOACs to adjusted-dose warfarin (RE-LY, ROCKET-AF, ARISTOTLE). The main differences identified related to potential treatment effect modifiers regarding the mean time spent in therapeutic range (TTR) in the warfarin arm, the risk of stroke or systemic embolism across the trials (mean $CHADS_2$ score: Cardiac failure, Hypertension, Age ≥ 75 years, Diabetes mellitus, Stroke, 2 two points for stroke) or primary versus secondary prevention, and type of populations used in the analysis. Kansal et al. appropriately adjusted the ROCKET-AF TTR to match the RE-LY population based on individual patient data. Meta-regressions are not expected to minimize confounding bias given limited data, whereas subgroup analyses had some impact on the point estimates for the treatment comparisons. **CONCLUSIONS:** Results of the synthesis studies were generally comparable and suggested the NOACs had similar efficacy, although some differences were identified depending on the outcome. The extent to which the differences in the distribution of TTR, $CHADS_2$ or primary versus secondary prevention biased the results remains unclear.

PCV19

TARGETED LITERATURE REVIEW OF UNMET NEED IN THE HYPERLIPIDAEMIA POPULATION WITH HIGH RISK OF CARDIOVASCULAR DISEASE

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OBJECTIVES: To examine recommended target levels of low-density lipoprotein cholesterol (LDL-C) for hyperlipidaemia patients at high risk (i.e., with two or more risk factors or coronary heart disease or its risk equivalents) for cardiovascular disease (CVD); to determine the proportions of patients who do not achieve targeted LDL-C levels in real-world setting studies. **METHODS:** A targeted literature review identified guidelines and real-world studies that analysed hyperlipidaemia patients who were not at goal (as defined by study). MEDLINE, Embase, the Cochrane Library, and BIOSIS databases were searched. Guideline publications were searched from 2008; observational studies were searched from January 2005 to December 2013. There were no language or geographical restrictions. **RESULTS:** 17 guidelines and 70 observational studies were included in the review. While country-specific guideline recommendations vary slightly, the commonly used European Atherosclerosis Society and European Society of Cardiology (EAS/ESC) guidelines recommend a LDL-C target of < 2.5 mmol/L for patients with high CVD risk. Most studies reported that between 61.8% and 95.4% of high-risk patients did not reach this target. 3 studies from North America reported lower proportions, between 18.9% and 42.3%. The EAS/ESC guidelines recommend a LDL-C target of < 1.8 mmol/L for patients with very high CVD risk. Studies reported that 68.1% to 96.0% of patients do not achieve this goal. **CONCLUSIONS:** Patients in higher cardiovascular-risk categories tend to have more stringent LDL-C target levels, which may contribute to failure to achieve target levels. This suggests several unmet needs: large numbers of patients who fail to achieve LDL-C targets, reducing the patients' risk for CVD, and consequently reduce the occurrence of cardiovascular events. Based on recently published American College of Cardiology and American Heart Association guidelines, which do not recommend a treatment target LDL-C level, further research is needed to re-evaluate the unmet need in hyperlipidaemia patients.

PCV20

STUDY ON DRUG UTILIZATION AND ASSESSMENT OF STROKE RISK USING CHADS2 AND CHA2DS2-VASC SCORING IN ELDERLY PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION

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OBJECTIVES: Stroke Risk Stratification in AF patients of can be done using $CHADS_2$ (Congestive heart failure, Hypertension, Age ≥75, DM, prior Stroke/TIA [2 points]); or $CHA_2DS_2VASc_2$ (Congestive heart failure/left ventricular ejection fraction ≤35%, Hypertension, Age ≥75 [2 points], DM, prior Stroke/TIA/thromboembolism [2 points], Vascular disease, Age 65–74, Sex- female). Treatment options for Prevention of stroke includes Anti-coagulants (Vitamin K Antagonist-Warfarin, Acenocoumarol; and Newer Oral Anticoagulant- Dabigatran) and anti-platelets (Aspirin and Clopidogrel). The objective of this study was to assess better tool for Stroke Risk Stratification; $CHADS_2$ vs $CHA_2DS_2VASc_2$ and to observe utilization pattern of antithrombotics with stroke as the outcome. **METHODS:** Elderly patients (Age>65yrs) with Non-Valvular Atrial Fibrillation admitted in the hospital within span of 2yrs (2012-13) were selected excluding patients with comorbidities like Atrial flutter, DVT, PFO, Endocarditis and/or ARF (after approval of ethical committee). Total of 160 patients were segregated based on stroke risk and percentage of patients experiencing thromboembolic event in each group was observed and $CHADS_2$ and CHA_2DS_2-VASc were compared. The efficacy of antithrombotics in prevention of thromboembolic event in patients with AF was studied. **RESULTS:** For stroke risk stratification, CHA_2DS_2-VASc was observed to be a better tool than $CHADS_2$ to predict 'truly low risk', 'moderate risk' and 'high risk' patients. A shift of AF patients from 'low-moderate risk' by $CHADS_2$ to 'high risk' by CHA_2DS_2VASc was noticed, 95% of patients required anticoagulation (either VKA or NOACs) as per CHA_2DS_2VASc, whereas, only 60% required OACs as per $CHADS_2$. Most patients who experienced CVA belonged to 'No antithrombotics prescribed' group (25%). Dabigatran showed no incidence of CVA outcome, followed by VKA-, (Warfarin-28% and Acenocoumarol-18%) and least efficacy was seen by Antiplatelets-30%. **CONCLUSIONS:** CHA_2DS_2-VASc showed better prediction than $CHADS_2$ for stroke risk prediction. Dabigatran was observed to have better outcome followed by VKA and Anti-platelets.

PCV21

MANAGEMENT OF CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION: CLINICAL AND REPORTED OUTCOMES FROM A REFERRAL HOSPITAL IN SPAIN

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OBJECTIVES: To evaluate the management of Chronic Thromboembolic Pulmonary Hypertension (CTEPH) in a referral hospital by assessing clinical variables, patient-reported outcomes and caregivers' burden. **METHODS:** An observational, retrospective study was conducted. All patients (aged >18 years) attending the specialised unit on CTEPH at the 12 de Octubre Hospital (Spain), between January 2010 and November 2012, were offered to participate. Clinical variables were recorded at the clinical session for treatment decision (Pulmonary endarterectomy –PEA- if operability was confirmed or medication therapy –MT- if inoperable), and after one year. Outcomes considered: The New York Heart Association Functional Class (FC), 6-Minute Walking Distance, pulmonary arterial pressure, pulmonary vascular resistance and pro-brain natriuretic peptide. Participants completed the EQ-5D and caregivers' fulfilled the Zarit Burden Interview. Differences between groups were studied (Chi-squared, Mann-Whitney U and ANCOVA). **RESULTS:** A total of 64 CTEPH cases (57.8% males) were included. Mean (SD) age at diagnosis was 55.8 (14.9) and 67.2% had an III-IV FC at diagnosis. At the moment of treatment prescription, differences in clinical variables were not found (all p>0.4) between PEA (n=35-54.7%-) and MT groups (n=29-45.3%-). After 12 months, 8 patients died (2 in PEA group and 6 in MT). Among survivors, FC was significantly better in PEA group (93.9% improved at least one level). Regarding EQ-5D, patients undergoing PEA showed significant higher utilities (0.83-0.17- vs. 0.53-0.31-p=0.007) and VAS values (80.22-14.24- vs. 49.47-20.68-p<0.001). Furthermore, mean VAS values in PEA group were comparable to general population (adjusted by sex and age). Finally, formal care was needed by just 4.8% of patients in PEA versus 33.3% in MT. Reported caregivers' burden were relatively low in both groups (p=0.87). **CONCLUSIONS:** The positive outcomes obtained, especially in those patients undergoing PEA, suggest the experienced management of CTEPH by this referral hospital and highlights the importance of detecting candidates for PEA.

PCV22

THE 3.5-YEAR MORTALITY IMPACT OF DRUGS IN SECONDARY PREVENTION OF MYOCARDIAL INFARCTION IN REAL-LIFE (INTERIM ANALYSIS OF THE EOLE COHORT)

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OBJECTIVES: Few studies have assessed the real-life impact of secondary prevention drugs on all-cause mortality post-myocardial infarction (MI), especially in countries with low incidence of MI. The objective of this interim analysis after 3.5-year of follow-up was to assess the real-life all-cause mortality impact of drugs reimbursed for MI secondary prevention in France: acetylsalicylic acid (ASA), anti-platelet agents (APA), beta-blockers (ß-), angiotensin converting enzyme inhibitors (ACEI), statins, and omega-3 supplementation (Om3). **METHODS:** Cohort study of patients with recent (≤3 months) acute MI included by hospital and non-hospital cardiologists, with 6-year follow-up. Vital status was obtained from the National death registry, and failing that by patient/relatives/physicians investigation. Drug exposure was defined using both physician and patient reports at inclusion. Cox proportional hazard model was used to estimate for each drug, mortality hazard ratio (HR) of exposed versus non exposed patients, adjusted for gender, age, cardiovascular risk factors, other MI prevention drugs, and propensity score to be exposed at inclusion. **RESULTS:** Between May 2006 and June 2009, 596 physicians included 5538 patients: mean age 62.1 years, 77.6% male, 9.6% current smokers, 14.5% diabetic, 44.6% hypercholesterolemic, 43.6% hypertensive, 8.2% with LVEF <40%. At inclusion, 97.5% were exposed to ASA, 91.0% to APA, 89.7% to ß-, 71.1% to ACEI, 92.0% to statins, and 15.7% to Om3. The 3.5-year mortality was 7.8% (95%CI [7.1%-8.5%]) with an incidence rate of 23.2 per 1000 patient-years. Adjusted HR were: 0.98 [0.60-1.61] for ASA, 0.86 [0.60-1.24] for APA, 0.84 [0.63-1.11] for ß-, 0.80 [0.61-1.03] for ACEI, 0.67 [0.45-1.00] for statins, and 0.82 [0.58-1.16] for Om3. **CONCLUSIONS:** The 3.5 year interim all-cause real-life death reduction point estimates were close to those of large randomized controlled trials, except for ASA, for which almost all patients were exposed. The study's statistical power will be sufficient to confirm or not these trends at the final 6-year analysis.

PCV23

A DATABASE ANALYSIS OF PATIENTS ELIGIBLE FOR SECOND-LINE LIPID-LOWERING TREATMENT FOR HYPERCHOLESTEROLAEMIA IN ENGLAND

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OBJECTIVES: In 2012, the NHS Health and Social Care Information Centre (HSCIC), with support from NICE, reported on the eligible population for ezetimibe as a second-line lipid-lowering therapy (LLT) in England. Several populations were omitted from this analysis, including some very high-risk Type 2 Diabetes Mellitus (T2DM) patients with CVD. We re-evaluated the eligible population for ezetimibe indicated for treatment intensification in a retrospective analysis. **METHODS:** Patients with ≥1 total cholesterol (TC) measure in each year of interest were iden-

tified from the Clinical Practice Research Datalink (CPRD). From this cohort, three groups of patients were identified and counted for 2010, 2011 & 2012: Group 1 – very high-risk T2DM patients with CVD, TC ≥ 4.0 to <5.0mmol/l and low-density lipoprotein cholesterol ≥2.0mmol/l despite statin treatment; Group 2 – untreated patients, with a TC ≥5.0mmol/l who were not prescribed any LLT after ceasing statin therapy; Group 3 – patients prescribed atorvastatin, rosuvastatin and/or ezetimibe with TC <5.0mmol/l who previously had TC ≥5.0mmol/l. Numbers were extrapolated to the population in England. **RESULTS:** Of the general population in England in 2012, 8, 200, 699 (15.4%) patients had a TC test recorded, with similar proportions in 2010 & 2011 (15.4% and 15.3% respectively). Among the three groups defined in this analysis, a total of 305, 261 patients eligible for ezetimibe were not included in the 2012 estimates by HSCIC. This represents an 80.0% increase of the original estimate of 381, 797 patients using the original HSCIC methodology, corresponding to 33, 753, 141, 619, and 129, 889 patients in Groups 1, 2 and 3, respectively. Hence a year-on-year increase in the estimated eligible population were observed compared to the original HSCIC estimate; 64.8% increase in 2010 and 75.7% increase in 2011. **CONCLUSIONS:** A significant and increasing number of high-risk patients eligible for ezetimibe were missed in the HSCIC estimates during 2010-2012.

PCV24

MORE THAN ONE IN TWO INSTANCES OF VENOUS THROMBOEMBOLISM (VTE) TREATED IN FRENCH HOSPITALS COULD HAVE OCCURRED DURING THE HOSPITAL STAY

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OBJECTIVES: describe the prevalence of venous thromboembolism (VTE), pulmonary embolism (PE) and deep vein thrombosis (DVT) without PE among all hospitalized patients and the percentages of those occurring during the hospital stays. **METHODS:** Statistics are issued from the national PMSI MCO databases which are encoded using the CIM10. The codes used for VTE are I801 to I809 for DVT and codes I260, I269 for PE... Any stay with a the ICD-10 codes selected regardless of the Principal Diagnosis of Medical Unit Summaries and whatever its position (Principal, Related or Associated Diagnosis) was considered as a hospital-occurred thrombosis unless it was the Principal Diagnosis of the first Medical Unit Summary of the stay. To eliminate outpatient consultations or in day care, stays of < 48 hours were excluded. The term of hospital-occurred is preferred to hospital-acquired VTE suggesting a nosocomial origin which can be the case or not. **RESULTS:** The results bear on the 18 683 603 hospital stays in 2010-2011. Out of 100 hospital stays involving VTE, for 40.3% VTE was the cause of hospitalization whereas 59.7% can be considered to have occurred during hospital-stay. These distributions are of 25.6% and 74.4% for DVT respectively 53.8% and 46.2% for PE. The age of patients varies little with whether VTE, DVT, and PE were hospital-occurred or not and are similar in men and women. The percentage of mortalities of these VTE is high and reaches 6.58% and the mortality from VTE, DVT, and PE is multiplied by a factor of 3 to 4 (p< .0001) when hospital-occurred. **CONCLUSIONS:** The high proportion of hospital-occurred VTE is an alarming situation that should question the quality of prevention and/or its effectiveness. VTE prevention policies must be strengthened in hospitals for the sake of patients and health care savings alike.

PCV25

RISK FACTORS ASSOCIATED WITH VENOUS THROMBOEMBOLISM RECURRENCE IN A EUROPEAN POPULATION

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OBJECTIVES: This study estimated venous thromboembolism (VTE) recurrence and associated risk factors in a European population, given limited data in this region. **METHODS:** This retrospective cohort study included data from physicians (376 general practitioners and 307 specialists) in France, Spain, Italy, and Germany, who completed case report forms (2,184 patient records) for the next 3-4 patients seen in consultation for any reason who had an initial VTE event 3 to 24 months prior (i.e., patients surviving 90 days since initial VTE). All Anderson & Spencer individual risk factors (plus gender, bleeding, and initial VTE type, but excluding previous VTE and bed rest >3 days) were entered into a Cox proportional hazard model accounting for censored data and predicting VTE recurrence. Backward stepwise regression was used to select a reduced final model. **RESULTS:** Patients' mean age was 61.3 years (SD=14.3) and 47.4% were female. Of 2,184 patients, 379 developed recurrent VTE over 1,298 person-years of follow-up. The final model included: age=40+ (91.6%) vs. 18-39 years, varicose veins (26.4%), history of heart failure (5.9%), congestive respiratory failure (1.3%), arthroscopic knee surgery (2.2%), central venous line (0.9%), chemotherapy (6.1%), and orthopedic (3.1%) surgery. Significant, independent predictors of recurrence were: varicose veins (hazard ratio [HR]: 1.4; 95% confidence interval [CI] 1.1-1.8), central venous line (HR: 3.2; CI 1.5-6.8), congestive respiratory failure (HR: 2.4; CI 1.2-4.6), and heart failure (HR: 1.5; CI 1.1-2.2). Other factors, including age=40+, knee surgery, chemotherapy, orthopedic surgery, and type of VTE (e.g., deep vein thrombosis vs. pulmonary embolism) did not exhibit significant associations with recurrence of VTE. **CONCLUSIONS:** VTE recurrence is high in this European population and associated with several independent risk factors. Targeted anticoagulant treatment post-initial VTE plus longer term prevention of recurrence are needed, including attention to risk factors that help differentiate patients more likely to experience recurrence.

PCV26

REAL WORLD INCIDENCES AND HOSPITAL COST OF VENOUS AND PULMONARY THROMBOEMBOLIC EVENTS IN FRANCE

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OBJECTIVES: To estimate the cumulative incidence and hospital cost for venous and pulmonary thromboembolic events in a real world setting in France. **METHODS:** We conducted a retrospective analysis of the EGB database, a 1/97th random sample of the whole National health insurance database records linked to hospitalizations. All patients hospitalized in 2010 and 2011 with a diagnosis of deep vein thrombosis (DVT) or pulmonary embolism (PE) were included. Inpatients were identified through principal diagnosis of hospitalization stay. Outpatients with a DVT were identified by 1) an echo Doppler exam, 2) preceded or followed by a low molecular weight heparin or fondaparinux delivery (+/-7 days), and 3) a subsequent Vitamin K antagonists delivery (0 to 7 days). Incidences and annual hospital cost of DVT and PE were estimated and extrapolated to the overall French population, and cumulative proportions of recurrences were calculated. **RESULTS:** For 2011, the estimated crude incidences were 141/100,000 (91,650 patients) for DVT, and 79.4/100,000 for PE (51,610 patients in France). Mean age of patients was 67.0+/-17.2 years for PE and 64.1+/-17.7 years for DVT. A majority of patients were females (57% in both groups). After index event (PE/DVT), the cumulative proportions of venous thromboembolic recurrences were 2.6% at 1 month, 3.7% at 3 months, 5.1% at 6 months and 6.7% at 12 months. The cumulative proportions of death after a PE and a DVT first event were 0.2% at 1 month, 1.1% at 3 months, 2.6% at 6 months and 6.2% at 12 months. Annual hospital cost of venous and pulmonary thromboembolic events was estimated at 712 million € (362 million € for DVT and 350 million € for PE). **CONCLUSIONS:** In 2011, around 143,000 patients suffered from venous and pulmonary thromboembolic events in France. Hospitalized events accounted for an important burden in France.

PCV27

COGNITIVE FUNCTION AND NON-ADHERENCE TO ANTIHYPERTENSIVE MEDICATIONS

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OBJECTIVES: Non-adherence to blood pressure medications is common, present in 30-50% of patients, and known to be associated with an increased risk for major cardiovascular events and increased health care costs. Prior research suggests that impaired cognitive function is associated with medication non-adherence. Our aim was to determine if easily administered measures of cognitive function can be used to identify hypertensive patients at increased risk of medication non-adherence. **METHODS:** A convenience sample of 101 primary care patients (n=101) with uncontrolled hypertension was enrolled from two hospital-based clinics in ethnically diverse communities of New York City. Patients with overt dementia as noted by their primary care doctors were ineligible. Subjects completed three brief cognitive tests (≤5 minutes to complete each one): Trail Making Test-A, Trail Making Test-B, and the Symbol Digit Modalities Test. The primary outcome was adherence based on percentage of doses taken as prescribed, measured by a 4-compartment electronic pillbox (MedSignals). Multivariable logistic regression was used to determine if impaired cognitive function was associated with poor adherence after adjusting for age, gender, ethnicity, education, and total blood pressure medications. **RESULTS:** Patients who were classified as impaired when screened by Trail Making Test-B had a three-fold (OR=2.91,95% CI, 1.02-8.35) increased likelihood of non-adherence compared with those who were not impaired, adjusting for age, education, gender, ethnicity, and number of BP medications (p=. 05). Trail Making Test-A and Symbol Digit Modalities Test were non-significant predictors of adherence in both adjusted and unadjusted analyses. **CONCLUSIONS:** Trail Making Test-B, a measure of executive function, may be a useful screening tool to identify patients without overt dementia who are at risk for non-adherence to anti-hypertensive medications. The findings from this study may provide an opportunity to identify a tailored approach to medication adherence interventions.

PCV28

RETROSPECTIVE ANALYSIS ON HOSPITALIZATION AND HEALTH CARE COSTS, ACCORDING TO SERUM URIC ACID LEVELS IN PATIENTS FROM A SAMPLE OF ITALIAN LOCAL HEALTH UNITS

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OBJECTIVES: Hyperuricemia is an independent risk factor for gouty arthropathy, renal disease, atherosclerosis and cardiovascular diseases (CVD). The objective of this study was to explore the relationship between serum uric acid (SUA) levels and hospitalization events and assess health care costs. **METHODS:** A retrospective analysis using a large administrative database and a clinical registry containing laboratory results was performed. Subjects, aged ≥ 18, were assigned to one of the 4 groups based upon the first SUA measurement between October 1, 2010 and September 30, 2011: ≤6 mg/dl [good-control], >6 mg/dl and ≤ 7 mg/dl [fair-control], >7 mg/dl and ≤8 mg/dl [poor-control], >8 mg/dl [very-poor-control]. We calculated incidence rates to estimate the risk of hyperuricemia-related and CVD hospitalizations occurred until December, 2012. A Poisson regression model was used to assess the relationship between the number of CVD hospitalizations and SUA level. Total annual costs included all the pharmacological treatments and the direct costs due to hospitalizations and outpatient services. **RESULTS:** Of 52,822 patients included, SUA level was ≤ 6 mg/dl -good-control- for 33,638 (63.7%) patients and >6 mg/dl –suboptimal-control- for 19,184 patients (36,3%), of whom 60,7% with fair-control, 25,8% poor-control and 13,5% very-poor-control. Compared with good-control group, suboptimal-control patients showed an increased risk of hyperuricemia-related hospitalizations (unadjusted rate was 1,02 vs 0,43 per 1000 person-years, p<0.001) and of CVD hospitalizations (unadjusted rate 5,09 vs 3,17 per 100 person-years, p<0.001; adjusted incidence rate ratio 1.22, p<0.001). Over one year, the mean total cost was: €2,077.43 in good-control patients; €2,079.87 in fair-control patients; €2,296.39 in poor-control patients; €3,295.41 in very-poor-control patients. **CONCLUSIONS:** The 36,3% of the patients in this study sample were at sub-optimal SUA control (>6mg/dl). This analysis indicates that higher hyperuricemia-related and CVD hospitalizations as well as total health care costs resulted associated with higher SUA levels.