A META-ANALYSIS OF CARDIOVASCULAR RISK FACTORS: WHICH IS THE DIFFERENCE BETWEEN MEN AND WOMEN?

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OBJECTIVES: The aim of this study was to conduct a meta-analysis to identify the potential differences of cardiovascular risk factors between men and women in primary prevention. METHODS: A systematic review was performed identifying prospective cohort studies in which cardiovascular risk factors were analyzed (tobacco use, hypertension, diabetes, obesity and dyslipidemia) associated to the development of acute myocardial infarction, angiina pectoris or cardiovascular death, and in which results were segmented between men and women. The search was done in October 2009 in Medline, EMBASE and the Cochrane Collaboration. Two independent reviewers identified the abstracts, selected full articles and extracted the data. Relative risk (RR) with 95% confidence intervals (95%CI) were calculated. Random effects models were employed in the meta-analyses using Meta-Analyzer v.2.0 software. A meta-regression was also conducted. RESULTS: From 3,712 studies, 21 cohort studies were included. The number of participants among the trials varied between 5,000 and 600,000 per study with a follow-up from 5 to 40 years. The meta-analyses showed that premenopausal women in comparison to men had a higher risk of having cardiovascular event when they have diabetes mellitus (RR 2.79 vs. 2.03), obesity (1.45 vs. 1.12), and hypercholesterolemia (1.91 vs 1.49), increase in LDL, levels (2.08 vs. 1.72) or increase in HDL levels (2.22 vs. 1.61); however, men showed higher risk of development of acute myocardial infarction, angina pectoris or cardiovascular death; primarily those related to condition severity (based on proxy measures of comorbidity with two CVD or filling both diabetes and CVD medications), as well as not using or not complying with medications.

IDENTIFYING RISK FACTORS ASSOCIATED WITH DISEASE BURDEN IN PATIENTS WITH TYPE II DIABETES AND COMORBID CARDIOVASCULAR DISEASES

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OBJECTIVES: To evaluate 1) use of diabetes and cardiovascular medications; 2) the associations of medication compliance with disease burden. METHODS: California Medicaid administrative data (2002–2004) were used to identify patients ≥ 20 years of age with a diagnosis of type II diabetes concurrent with any combination of the following cardiovascular diseases (CVD): hypertension (HYP), coronary artery disease (CAD), and heart failure (HF). We assessed patients use of any appropriate diabetes or cardiovascular medication. Proportion of days covered 20.8% was used to evaluate medication compliance. Disease burden was defined as any emergency or inpatient visit. Logistic regressions were used to identify factors associated with disease burden. RESULTS: We identified 21,740 patients. Fifty-six percent of patients had both diabetes and cardiovascular medications. When compared to patients with comorbid HYP (31%), those with two CVD conditions HF & CAD(69%) or HYP & CAD(64%) were more likely to fill both diabetes and cardiovascular medications (P < 0.0001). Approximately 43% of patients did not fill or were noncompliant with appropriate medications. Major significant factors associated with disease burden included CVD type vs. HYP; HF & CAD (OR:1.39), noncompliance with medications vs. compliance with both medications: not filled or noncompliant (OR:1.75), or compliance with only diabetes (OR:1.35) or only cardiovascular medication (OR:1.20); two or more cardiovascular medication fills (OR:1.20). CONCLUSIONS: Prevalence of use of both appropriate diabetes and cardiovascular medications low in diabetic patients with comorbid CVD. We identified multiple risk factors of disease burden, primarily those related to condition severity (based on proxy measures of comorbidity with two CVD or filling both diabetes and CVD medications), as well as not using or not complying with medications.

TRENDS IN C-REACTIVE PROTEIN SCREENING PRIOR TO STATIN USE IN THE UNITED STATES

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OBJECTIVES: The objective of this study was to explore trends in high sensitivity C-reactive protein (hs-CRP) screening prior to statin use in the United States. METHODS: The PharMetrics Integrated Outcomes Database was used to obtain medical claims records for continuously enrolled adult ≥21 years first-time statin users. Patients were followed for one year. Both hs-CRP and lipid tests were identified by CPT-4 procedure codes. Descriptive statistics were used to characterize the population and estimate unadjusted associations between patient characteristics and hs-CRP testing. Multivariable logistic regression was used to estimate the odds of testing, controlling for age, gender, diabetes, statin intensity, prescribing physician specialty, geographic region and health plan type. RESULTS: Between January 1997 and March 31, 2007, 33,666 new statin users received lipid tests within 90 days prior to the index statin prescription. One thousand (3%) also received hs-CRP tests during this time. Over 80% of these individuals received the tests in 2004 or later. Those receiving hs-CRP tests were more likely to have a Medicare, Medicaid or other type of plan, as compared to private insurance (P < 0.05) and were less likely to reside in the South, Midwest or West, as compared to the Northeast (P < 0.01). Individuals who received hs-CRP tests had higher adjusted odds of receiving a high potency statin (OR = 1.37, P < 0.01) and lower odds of having diabetes (OR = 0.56, P < 0.01). Those receiving hs-CRP tests were more likely to have a cardiologist as their statin-prescribing physician, rather than a family or general practitioner (OR = 1.31, P = 0.02).

COMPARATIVE EFFECTIVENESS ANALYSIS IDENTIFIES A SUPERIOR POINT OF CARE DEVICE FOR ASSESSING THE INTERNATIONAL NORMALIZED RATIO

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OBJECTIVES: Comparative effectiveness research identifies superior clinical devices or treatments through head-to-head comparisons. This study describes the use of an innovative framework to assess the quality and safety of two INR Point of Care devices. METHODS: Patients enrolled in the hematology Anticoagulation Management Service provided three INR measurements: one venous sample analyzed by our lab (considered the standard measure), one fingerstick by the Coaguchek XS Plus. Agreement between INR values from the Coaguchek XS device and the lab compared to the Hemochron device tended to report both high and low INR values were within the target range when the laboratory said otherwise. Consequently, the Hemochron device was determined to be more effective (94% vs. 88% sensitivity). The Coaguchek XS device compared to the Coaguchek XS 10% vs. 18%, respectively; RR: 1.7, 95% CI: 1.1–2.4, P = 0.007). CONCLUSIONS: Comparative effectiveness analysis can provide essential information to make informed decisions when selecting medical devices to prevent.