CARDIOVASCULAR DISEASE OUTCOMES RESEARCH

CV1

EFFECTIVENESS OF COMBINED BETA-BLOCKER AND ACEI OR ARB THERAPY IN CHRONIC HEART FAILURE

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OBJECTIVE: Clinical trials show the efficacy of combination beta-blocker (BB) and angiotensin converting enzyme inhibitor (ACEI) or angiotensin II receptor blocker (ARB) therapy for the treatment of chronic heart failure (CHF). We sought to test the effectiveness of these drugs in day-to-day health care.

METHODS: The study was a retrospective analysis of a national cohort of patients diagnosed with CHF from October 1, 1996 through September 30, 2002 identified from the Department of Veterans Affairs electronic medical records system. Prevalent cases with CHF for at least 90 days as of October 1, 2001 (index date) were analyzed separately from incident cases identified after index date. Patients were classified into four treatment categories: BB, ACEI or ARB, Both and Neither according to their exposure after index date. Multiple logistic regression analysis was employed to assess the adjusted association between these treatments and mortality within 1 year after index date, controlling for demographic factors, years with CHF, 30 co-morbidities and co-medications.

RESULTS: Prevalent cases: 231,109 patients were identified, with the crude death rate 8.8%. Majority of the cohort was male (98.2%) and age >65 years (76.1%). 28.3% of patients were on beta blockers only, 12.7% on ACEI or ARB only, 40.1% on both and 18.9% on neither. All three treatment options showed protective effect as compared to Neither. Adjusted OR (95% CI) were: BB 0.646 (0.616, 0.677), ACEI or ARB 0.708 (0.669, 0.749) and Both 0.460 (0.435, 0.488). The same pattern of protective effect remained for incident cases (N = 68,353). Adjusted OR (95% CI) were: BB 0.713 (0.652, 0.781), ACEI or ARB 0.780 (0.701, 0.868) and Both 0.614 (0.553, 0.681).

CONCLUSION: Effectiveness of combination therapy of beta blockers and angiotensin inhibition was confirmed, supporting the use of evidence-based care to improve outcomes in the “real-world” setting.

CV2

THE COST-EFFECTIVENESS OF Candesartan in the Treatment of Chronic Heart Failure (HF)—An Assessment of the Low Left Ventricular Ejection Fraction (LOW-LVEF) Trials in the Candesartan-in-Heart-Failure-Assessment-of-Reduction-in-Mortality-And-Morbidity (CHARM) Trial Programme

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OBJECTIVE: To estimate the lifetime cost-effectiveness of candesartan (Atacand) in addition to standard care in patients with HF based on the Low-LVEF trials in the CHARM programme.

METHODS: A stochastic Markov model was developed to estimate resource utilisation, morbidity and mortality effects during and after the end of the Low-LVEF trials. Trial data were integrated with external data—specific for Swedish patients—on morbidity, mortality, and HRQoL. A Weibull hazard function was estimated on the pooled data from the CHARM-Alternative and the CHARM-Added trials (Low-LVEF) to capture the treatment effect of candesartan during 40 months of follow up. Active treatment is modeled to continue until death, with identical mortality rates in both arms after end of follow-up. Age specific mortality rates were supplied by the Swedish HF registry. Medical resource were recorded in the CHARM trials and priced according to public Swedish DRG-tariffs. TTO based QALY weight estimates for NYHA-classes derive from a study of 323 Swedish HF patients. Benefits and costs were discounted at 3%. RESULTS: The expected lifetime per patient direct medical costs and QALYs for candesartan and placebo were SEK371,000 and SEK 352,000 (1 USD = SEK6.40) and 5.84 and 5.43 QALYs (8.75L Y vs 8.17L Y) respectively. This corresponds to an ICER per QALY gained of approximately SEK46,000 (SEK33,000 per LY). The CEAC shows that the likelihood of candesartan representing the cost effective treatment strategy is 0.633, 0.969 and 1 at a willingness-to-pay at SEK50,000, 60,000, and 70,000 respectively. CONCLUSION: Candesartan reduces cardiovascular death, hospital admissions, and all-cause mortality in patients with HF and LVEF ≤ 40%, when added to standard therapies. The present study suggests that long-term treatment with candesartan is highly cost-effective, both as an alternative to and in addition to ACE-inhibition, in HF.

CV3

CLINICAL AND ECONOMIC OUTCOMES ASSOCIATED WITH BLEEDING DURING CORONARY ARTERY BYPASS GRAFT SURGERY AMONG ELDERLY AMERICANS

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OBJECTIVE: To present immediate and long-term data on the clinical and economic outcomes associated with major bleeding during coronary artery bypass graft (CABG) surgery requiring cardiopulmonary bypass (CPB). METHODS: Using data from the United States Medicare Public Use Files, we examined clinical and economic outcomes for patients ≥65 who underwent an incident CABG requiring CPB in 2003. Patients were stratified as to bleeding status with “Major bleeding” defined as ≥ 4 units of blood transfused. We followed patients for up to two years after surgery, and compared discharge status, immediate and long-term morbidity and mortality, and immediate and long-term costs between those experiencing major bleeding and those not.