OBJECTIVES: To estimate the cost of treatment for achieving 1% LDL-C reduction and the cost of getting a patient to LDL-C target of <2 mmol/L with ezetimibe co-administered with simvastatin, compared to atorvastatin and rosuvastatin. METHODS: Following a 6-week run-in and washout period, simvastatin, patients were randomized to receive either simvastatin 10/40 mg, atorvastatin 40 mg or rosuvastatin 5–10 mg for 6 weeks. The total treatment cost for the trial period was estimated. A post-hoc analysis of the trial participants was conducted to compare the treatment cost per patient achieving LDL-C target of <2 mmol/L between the three comparator treatments. The cost of generic simvastatin 40 mg was assumed to be £1.37 for a 28 day treatment (BNF). RESULTS: At the end of the 6-week trial period, the treatment cost per 1% reduction in LDL-C was estimated to be £1.38 (95% CI: £1.42–£1.79) for ezetimibe co-administered with simvastatin. The corresponding treatment costs were £3.33 (2.64–£4.51) for atorvastatin and £4.59–£50.75 for atorvastatin and rosuvastatin, respectively. Cost per patient achieving the LDL-C target of <2 mmol/L was £61.49 (95% CI: £56.66–£67.72) for ezetimibe co-administered with simvastatin compared to £101.84 (£87.69–£121.42) for atorvastatin and £155.06 (£122.54–£211.12) for rosuvastatin. CONCLUSIONS: Co-administration of ezetimibe with simvastatin 40 mg is a cost efficient way of reducing LDL-C compared to atorvastatin 40 mg or rosuvastatin 5–10 mg monotherapy regimen.

EFFECT OF CALCIUM CHANNEL BLOCKERS ON CARDIOVASCULAR DISEASE PREVENTION

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OBJECTIVES: Antihypertensive therapy is a well-established approach to reducing the risk of cardiovascular disease (CVD). The main objective of this meta-analysis was to find out whether the calcium channel blockers are superior, equal, or inferior to other treatments in reducing the frequency of cardiovascular complications.

METHODS: Studies were identified through PubMed with a publication date before February 24, 2009. We selected studies in hypertension that assessed cardiovascular events and included at least 100 patients, who were randomly assigned calcium channel blockers or other antihypertensive drugs and who were followed up for at least 1 year. The 2 authors independently assessed studies for inclusion and quality.

RESULTS: A total of 47 RCTs and 32 case series were included in the analysis. Calcium channel blockers provided more protection against stroke than the conventional therapy consisting of diuretics and β-blockers (risk ratio 0.98, 95% CI 0.80–0.93) and new antihypertensive drugs such as angiotensin-converting enzyme inhibitors or angiotensin receptor blockers (risk ratio 0.87, 95% CI 0.79–0.96). There were no significant differences in major cardiovascular events risk, total mortality and cardiovascular disease mortality between regimens based on calcium channel blockers and regimens based on the conventional therapy (risk ratio 0.98, 95% CI 0.88–1.09, risk ratio 0.98, 95% CI 0.90–1.06; risk ratio 0.95, 95% CI 0.83–1.07) or new antihypertensive drugs (risk ratio 1.00, 95% CI 0.95–1.05; risk ratio 0.97, 95% CI 0.92–1.02; risk ratio 0.96, 95% CI 0.89–1.04). CONCLUSIONS: These findings suggest that calcium channel blockers decrease the risk of stroke more effectively than other treatments in patients with hypertension. Moreover, when calcium channel blockers were compared with new antihypertensive drugs they demonstrated similar reductions in cardiovascular morbidity and mortality.

THE Efficacy OF Clopidogrel Versus THE COMBINATION OF low DoSAGE ASSOCIATED EXTENDED-RELEASE DPIYRAMDAMO IN PREVENTING SERIOUS VASCULAR EVENTS: A NETWORK META-ANALYSIS

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OBJECTIVES: To estimate the relative efficacy of clopidogrel versus low-dose aspirin plus extended-release dipyridamole (ASA+ERDP) in preventing serious vascular events among stroke patients. Additionally, to test whether a network meta-analysis (NMA) can give reliable estimates of treatments’ relative efficacy in the absence of direct evidence.

METHODS: A systematic literature review was conducted in EMBASE and MEDLINE to identify randomized controlled trial (RCT) evidence on the prevention of serious vascular events (including myocardial infarction, stroke and vascular death). A NMA with fixed effects was fitted to the data using WinBUGS. The NMA was first run on indirect evidence only (NMA_indirect), and these results were compared with results from a NMA including direct and indirect evidence (NMA_all). RESULTS: Three RCTs were identified (ESP2, ESPRIT, CAPRIE) comparing clopidogrel versus ASA+ERDP with aspirin; one RCT (PROFESS) provided direct evidence; two RCTs (CHARISMA and MATCH) provided additional data on clopidogrel from the link with aspirin-clopidogrel. Furthermore, one meta-analysis (ATC) compared the efficacy of different aspirin dosages; this was added in the network to link the aspirin arm with aspirin-clopidogrel. The odds ratio (OR) of ASA+ERDP versus clopidogrel for NMA_indirect was 1.15 (95% CI: 1.11–1.20). PROFESS reported a higher OR (99.0% vs 92.1%) and NMA_all resulted in 1.02 (95% CI: 1.01–1.10). All analyses have OR close to “1” and confidence intervals overlapping “1.” The point estimate of PROFESS is within the confidence bounds of NMA_indirect, but the OR from these analyses are in opposite directions. The confidence interval of NMA_all tightens when adding PROFESS into the network. CONCLUSIONS: The results of the analysis indicate that clopidogrel and ASA+ERDP are of equivalent efficacy in preventing secondary serious vascular events. Furthermore, in the absence of direct evidence, statistical techniques such as NMA can provide a reasonable estimate of relative efficacy.

AN ANALYSIS OF THE ANTITHYPERTENSIVE EFFECTIVENESS OF CO-ADMINISTRATION THERAPIES CONTAINING ARBS VERSUS ACE INHIBITORS

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OBJECTIVES: To explore the effectiveness of combination regimens containing Angiotensin Receptor Blockers (ARBs) compared to those containing ACE Inhibitors (ACEIs) in reaching target blood pressure (BP) in a real-world setting. METHODS: Records from a longitudinal population-based database of more than 170,000 patients in over 53 family practice clinics in southwestern Ontario, Canada were analyzed. These records contained chart abstracted information such as visit diagnosis, BP, medications and consultation notes. The records from adult non-diabetic patients who were hypertensive and were initiated on combination therapy in 2005 and continued on the combination for at least 9 months were included. Hypertension was defined as a BP exceeding 140/90 mmHg, chart entry of a diagnosis of hypertension, or use of anti-hypertensive medications. The proportions of patients reaching target BP (BP less than 140/90 mmHg) were compared. The mean and 95% confidence interval of the mean were computed per treatment group. RESULTS: A total of 6140 patients were treated with dual combinations containing an ARB or an ACE. In patients treated with at least one ARB, 39% reached target BP compared to 31% of those not treated with an ARB (p = 0.004). When comparing combinations with HCTZ, 35% and 30% of those on ARB and ACEI, respectively, reached target BP (p = 0.006). Within the patients treated with an ARB either in dual or tri-therapy, 48% of patients reached target BP in ACE group and 42% for losartan or valsartan (p = 0.001 for both), and 41% for candesartan (p = 0.001). CONCLUSIONS: In a real-world setting, a greater proportion of hypertensive patients treated with a combination containing an ARB reached target BP than those treated with a combination not containing an ARB. Within the ARB class, a greater proportion of patients treated with a combination containing losartan reached target BP.