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COST-EFFECTIVENESS OF CLOSTRIDIAL COLLAGENASE OINTMENT ON WOUND CLOSURE IN PATIENTS WITH DIABETIC FOOT ULCER

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OBJECTIVES: Determine the cost-effectiveness of clostridial collagenase ointment (CCO) plus surgical sharp debridement (SSD) relative to the standard of care (SC) plus SSD on wound closure for the treatment of diabetic foot ulcer (DFU). SC was defined as offloading plus daily wound care/dressings. **METHODS:** A 3-stage Markov model was used to predict the expected costs and outcomes of wound closure for CCO and SC. The 3 stages were open wound, epithelialization, and death. Outcome data used in the analysis were taken from a randomized clinical trial that directly compared CCO and SC. The primary outcome was the proportion of patients achieving a closed epithelialized wound. Transition probabilities for the Markov states were estimated from the clinical trial. A 52-week time horizon was used to determine the number of closed epithelialized wounds and the expected costs for the two therapies. Resource utilization was based on the treatment regimen used in the clinical trial. Costs were derived from standard cost references and medical supply wholesalers. The economic perspective taken was that of the payer. **RESULTS:** A total of 55 patients were included (28 for CCO and 27 for SC). Expected direct costs per patient for DFU were $2099 for CCO and $2376 for SC (a cost-savings of $278 for CCO). Patients treated with CCO had, on average, 35 ulcer-free weeks compared to 28 weeks for SC. CCO therapy had a higher probability of healing at 52 weeks compared to SC (89% vs. 80%, respectively). The cost per closed wound week was 1.4 times higher for SC compared to CCO ($61/week versus $85/week, respectively). **CONCLUSIONS:** CCO was cost-effective over SC, yielding better outcomes at a lower cost in patients with DFU. Health care providers should consider CCO as a more effective alternative to SC and an effective adjunct therapy to sharp debridement.

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HEALTH ECONOMIC EVALUATION OF CANAGLIFLOZIN IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS IN BELGIUM

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OBJECTIVES: To evaluate the cost-effectiveness of canagliflozin in dual therapy (plus metformin) compared to sitagliptin and glimepiride, and in triple therapy compared to pioglitazone (plus metformin), sitagliptin (plus glimepiride and metformin) and as add on to insulin (plus metformin) respectively in the Belgian setting from the public payers perspective. **METHODS:** The IMS CORE Diabetes Model was used to evaluate, based on head-to-head clinical trials, the cost-effectiveness of canagliflozin (assuming 70/30 dose distribution for the 100mg and 300mg respectively) versus the aforementioned comparators using Belgian-specific data, where available. Costs were obtained from official sources, literature and the IMS Hospital Disease Database and are reported in 2013 Euro (€).An annual discount rate of 3% was applied on costs and 1.5% on effects. **RESULTS:** The cost-effectiveness analyses indicate that in dual therapy when compared with sitagliptin and glimepiride, canagliflozin is expected to be cost–effective with an ICER of 6,992 €/QALY gained (with an incremental cost and QALY of €366 and 0.052) and 3,364 €/QALY gained (with an incremental cost and QALY of €410 and 0.122), respectively. In both triple therapies, treatment with canagliflozin appears to be a dominant strategy resulting in QALY gains and cost-savings. As an add on to insulin (plus metformin), canagliflozin is cost–effective with an ICER of 11,929 €/QALY gained (with an incremental cost and QALY of €721 and 0.060). The deterministic sensitivity analysis revealed that the results are sensitive to time horizon (with a time horizon of 10 years the ICER increases to a level in range €20.000-30.000). Probabilistic sensitivity analysis showed that in all the comparisons, canagliflozin appears to be the dominant strategy with a large proportion (about 48%) of cases being in the south-east quadrant. **CONCLUSIONS:** Canagliflozin 100 mg or 300 mg (70/30 dose split) provides economic value when used in treatment of type 2 diabetes in Belgium.

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TREATMENT OF TYPE 2 DIABETES IN COLOMBIA: ECONOMIC EVALUATION OF SAXAGLIPTIN/METFORMIN EXTENDED-RELEASE (XR) FIXED-DOSE COMBINATION (FDC)

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OBJECTIVES: To evaluate the economic impact of using saxagliptin/metformin XR FDC *versus* sulfonylurea (SU) plus metformin (MET) in Colombia, in people with type 2 diabetes (T2DM) who do not achieve treatment goal only with MET. **METHODS:** A discrete event simulation model (Cardiff diabetes model) based on UKPDS 68 was used to simulate disease progression and to estimate the economic and health treatment consequences in people with T2DM. Epidemiologic and clinical efficacy parameters were obtained from the literature. Cost of medication was obtained from country level drug prices, SISMED and Farmaprecios; cost of macro and microvascular events were based on POS tariffs, SOAT Manual and consultation with a local expert. A 20-year time horizon was assumed. Costs and health outcomes were discounted at 3% annually. Deterministic and probabilistic sensitivity analysis were also performed. **RESULTS:** The group treated with saxagliptin/metformin XR had fewer non-fatal events and episodes of hypoglycemia than the SU plus MET treated group. The model also predicted a lower number of fatal macrovascular events for the saxagliptin/metformin XR group (159 *vs.* 162). In both treatment groups the costs were driven by drug and treatment costs associated with myocardial infarction. The total cost of saxagliptin/metformin XR group over 20 years was lower than SU plus MET treated group (US$ 14,454,257 *vs.* US$ 14,735,176). Treatment with saxagliptin/metformin XR resulted in a greater number of quality-adjusted life years (QALYs) and life-years gained (LYG) than the SU combination (10,203 *vs.* 9,955 and 12,207 *vs.* 12,190 respectively). Cost-effectiveness results were robust according to sensitivity analysis. **CONCLUSIONS:** according to the model cost-effectiveness results in Colombia, saxagliptin/metformin XR FDC would be the dominant treatment option compared to SU as add-on to MET, for people with T2DM after failure of treatment only with MET.

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COST-EFFECTIVENESS ANALYSIS OF CANAGLIFLOZIN (CANA) VERSUS DAPAGLIFLOZIN (DAPA) AS AN ADD-ON TO METFORMIN (MET) IN PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN THE UNITED STATES

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OBJECTIVES: CANA and DAPA are sodium glucose co-transporter 2 inhibitors indicated for the treatment of adults with T2DM as monotherapy and as add-on combination therapy with other antihyperglycemic agents. The objective of this analysis was to evaluate the cost-effectiveness of using CANA 300mg versus using DAPA 10mg in dual therapy (with MET background) in patients with inadequate A1C control. **METHODS:** A validated health economics model, Economic and Health Outcomes (ECHO)–T2DM, was used to estimate 30-year outcomes associated with using each treatment in patients as an add-on to MET monotherapy. Treatment effects for A1C, weight and the probability of hypoglycemia were obtained from a Bayesian Network Meta-Analysis (NMA) of 52 (+/-4) week trials of subjects inadequately controlled on MET monotherapy. For parameters unavailable in the NMA (i.e., SBP, LDL, HDL and rates of AEs), values were obtained from a post-hoc analysis of pooled data from two trials of subjects receiving CANA and MET. In the model, treatment was intensified when A1C exceeded 7.5%, first by adding basal insulin and subsequently by adding prandial insulin. Utility decrements and U.S. costs associated with key macrovascular and microvascular heath states and AEs were sourced from the literature. All costs and benefits were discounted at 3%. **RESULTS:** CANA dominated DAPA; CANA was associated with both cost savings ($3,204) and more Quality Adjusted Life Years (0.22). The reductions in the relative risks of microvascular (up to 4.4%) and macrovascular events (up to 1.7%) as well as a delay in the use of insulin are the key drivers. **CONCLUSIONS:** This simulation suggests that CANA will not only produce cost-savings, but also result in QALY gains versus DAPA in the treatment of patients inadequately controlled on MET in the US.

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DAPAGLIFLOZIN: COST-EFFECTIVENESS AS AN ADD-ON THERAPY TO METFORMIN IN THE TREATMENT OF TYPE 2 DIABETES (T2DM) IN ARGENTINA AND CHILE

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OBJECTIVES: To compare the cost-effectiveness of dapagliflozin versus sulfonylurea (SU) added to metformin in people with T2DM inadequately controlled on metformin alone, in Argentina and Chile. **METHODS:** A discrete event simulation model (Cardiff diabetes model) based on UKPDS 68 was used to simulate disease progression and to estimate the economic and health treatment consequences in people with T2DM. Epidemiologic and clinical efficacy parameters were obtained from the literature. The cost of medication was based on country level drug prices; the cost of macro- and microvascular events was based on tariffs from the social security system of Argentina and the National Health Insurance (FONASA) of Chile. Costs were expressed in US dollars ($). A 20-year time horizon and the payer's perspective were assumed. Costs and health outcomes were discounted at 5% and 3% in Argentina and Chile, respectively. Deterministic and probabilistic sensitivity analyses (PAS) were performed. **RESULTS:** Comparison of dapagliflozin add-on to metformin versus SU addition to metformin showed an incremental benefit of 0.376 QALYs (95%CI: 0.368; 0.385) in Argentina and 0.422 QALYs (95%CI: 0.411; 0.432) in Chile. In both countries, the total cost of the dapagliflozin cohort was higher than that of the SU cohort (Incremental cost: Argentina: $3,400; Chile: $2,423). The calculated Incremental Cost-Effectiveness Ratio (ICER) was $9,036 and $5,745 per QALY in Argentina and Chile, respectively. Using WHO's criteria, dapagliflozin compared to the SU treatment strategy has 88% probability for Argentina and 99% for Chile of being highly cost-effective (ICER< 1 GDP per capita). The results were robust to sensitivity analysis. **CONCLUSIONS:** Dapagliflozin in combination with metformin is a cost-effective treatment option for patients who are inadequately controlled with metformin monotherapy in Argentina and Chile.

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COMPARATIVE COST-EFFECTIVENESS OF BECAPLERMIN GEL ON WOUND HEALING AND AMPUTATION IN PATIENTS WITH DIABETIC FOOT ULCER

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OBJECTIVES: Determine the cost-effectiveness of becaplermin gel* on wound healing and amputation for the treatment of diabetic foot ulcers (DFUs). **METHODS:** A 4-stage Markov model was used to predict the expected costs and outcomes