THE COST-EFFECTIVENESS OF INHALED INSULIN IN SWEDEN

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OBJECTIVE: To estimate the cost-effectiveness of inhaled insulin (INH) in Type 1 (T1DM) and Type 2 diabetes mellitus (T2DM) patients uncontrolled on current treatment.

METHODS: Cost-effectiveness analysis was conducted from Swedish health care perspective using the Economic Assessment in Glycemic control and Long-term Effects of diabetes (EAGLE) simulation model. EAGLE uses risk equations for the probability of micro- and macrovascular complications derived from UKPDS, WESDR and DCCT. Patient characteristics were obtained from the Swedish National Diabetes Registry. Complication costs and health-state utilities were taken from the literature. Equivalent efficacy was assumed for inhalation and standard insulin regimens. INH was assumed to result in earlier initiation or better intensification of insulin therapy. Data on intensification inertia were taken from a retrospective study and intensification differential (between INH and standard treatment) was taken from published literature. The analysis was performed over a 20y time-horizon. Costs (SEK2005) and quality-adjusted life-years (QALYs) were discounted by 3% per annum. RESULTS: Treatment costs were higher for all subgroups using INH, while the costs of complications were lower, and survival and utility higher. ICER’s for INH compared to staying uncontrolled on basal-bolus for T1DM and T2DM were SEK 38,948 and SEK 151,186/QALY, respectively. In T2DM patients uncontrolled on °Y2 orals ICER’s for INH compared to intensifying to basal or mix-insulin were SEK 178106 and SEK 16,2294/QALY, respectively. For patients uncontrolled on basal insulin ICER’s for INH compared to intensifying either to mix-insulin or basal-bolus were 265,376 and 232,442SEK/QALY, respectively; and in patients on mix-insulin the ICER’s for INH compared to intensifying to basal-bolus were 183,132SEK/QALY. Results were robust to changes in discount rate and intensification differential, although more sensitive to the level of treatment-associated utilities. CONCLUSION: For T1DM and T2DM patients uncontrolled on current treatment, a regimen including INH appears to be cost-effective when taking long-term micro- and macrovascular outcomes into account.