**Cost-effectiveness of saxagliptin compared to GLP-1 analogues as an add-on to insulin in the treatment of type 2 diabetes mellitus from a UK healthcare perspective**


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**Introduction**

Type 2 diabetes mellitus (T2DM) is a chronic progressive disease that is characterized by raised blood glucose levels due to resistance to the action of insulin.

T2DM represents a large health burden; approximately 2.9 million people were diagnosed with T2DM in 2013 in the UK, and treating T2DM complications is estimated to cost £15 billion per year.

Most T2DM patients' glycemic control gradually deteriorates to levels that are no longer adequate to their targets if, for a proportion of patients, glycemic targets are not met, additional treatment is necessary. Hence, both as add-on to insulin are required.

Saxagliptin belongs to the dipeptidyl peptidase-4 (DPP-4) class, and aims by inhibiting the DPP-4 enzyme in order to increase incretin hormone influencing blood glucose levels.

Saxagliptin at 5 mg once daily is licensed as combination therapy with insulin or with a short-acting insulin, while 2.5 mg is licensed as add-on to insulin.

**Objectives**

- To assess the cost-effectiveness of saxagliptin compared to the GLP-1 analogue, exenatide twice-daily, when added to insulin (monotherapy) for the treatment of patients with T2DM who are inadequately controlled on insulin.

**Methods**

**Model structure**

The validated CARDiff diabetes model was used, which is a previously validated discrete event simulation model. The model simulates a cohort of 30,000 patients over a 40-year time horizon, with a cycle length of 12 months.

The model utilise United Kingdom Prospective Diabetes Study (UKPDS) and ADVANCE (Action in Diabetes and Vascular Disease: Preterax and Diamicro NNR Controlled Evaluation) trial outcomes data from hospital treated subjects in the Health Outcomes Data Repository (HODaR): descriptive analysis.