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Article

## A Model-Based Meta-Analysis of 24 Antihyperglycemic Drugs for Type 2 Diabetes: Comparison of Treatment Effects at Therapeutic Doses

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### Abstract

Model-based meta-analysis was used to compare glycemic control, weight changes and hypoglycemia risk across 24 antihyperglycemic drugs used to treat type 2 diabetes. Electronic searches identified 229 randomized controlled studies comprising 121,914 patients. To ensure fair and unbiased treatment comparisons, the analyses adjusted for important differences between studies, including duration of treatment, baseline glycated hemoglobin, and drug dosages.

At the approved doses, glycemic control was typically greatest with glucagon-like peptide 1 receptor agonists (GLP-1RAs), and least with dipeptidyl peptidase-4 (DPP-4) inhibitors. Weight loss was highly variable across GLP-1RAs, but was similar across sodium–glucose cotransporter 2 (SGLT2) inhibitors. Large weight increases were observed with sulfonylureas and thiazolidinediones.

Hypoglycemia risk was highest with sulfonylureas, although gliclazide was notably lower. Hypoglycemia risk for DPP-4 inhibitors, SGLT2 inhibitors and thiazolidinediones was generally very low, but increased slightly for both GLP-1RAs and metformin. In summary, important differences between and within drug classes were identified.

 **Supporting Information**




Filename	Description
<a href="#">cpt1307-sup-0001-Supinfo.pdf</a> PDF document, 4.7 MB	<b>Supporting Information</b>
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