Type 2 Diabetes: Diabetic Medications on a Low Carbohydrate Diet - A Summary & Suggestions

There are three considerations with the use of diabetic medications in type 2 diabetes and a low carbohydrate diet:

- Is there a risk of hypoglycaemia?
- What is the degree of carbohydrate restriction?
- Does the medication provide any benefit, and if so, do any potential benefits outweigh any side effects and potential risks?

Drug Group	Action	Hypo risk?	Suggested action (to continue/stop)
SGLT-2 inhibitors	Increase renal glucose secretion	No	**STOP** (Concern over risk of causing ketoacidosis)
Insulins	Exogenous insulin	**YES**	**REDUCE/STOP** (*see below)
Meglitinides	Increase pancreatic insulin secretion	**YES**	**STOP** (or if gradual carbohydrate restriction then wean by e.g. halving dose successively)
Sulfonylureas	Increase pancreatic insulin secretion	**YES**	**STOP** (or if gradual carbohydrate restriction then wean by e.g. halving dose successively)
Biguanides	Reduce hepatic gluconeogenesis, and reduce peripheral insulin resistance	No	Optional, consider clinical pros/cons.
GLP-1 agonists	Slow gastric emptying. Glucose dependent pancreatic insulin secretion.	No	Optional, consider clinical pros/cons (expensive).
Thiazolidinediones	Reduce peripheral insulin resistance	No	Usually stop. Concern over risks usually outweighs benefits.
DPP-4 inhibitors	Inhibit DPP-4 enzyme	No	Stop. No significant risk, but no benefit in most cases.
Alpha-glucosidase inhibitors	Delay digestion of starch and sucrose	No	Stop. No benefit on a low carbohydrate diet.

*Insulin reduction suggestion - Important to tailor to individual. Usually requires close supervision with healthcare professional, and if in doubt seek expert input.
T2DM without 'beta cell failure': If using basal-bolus regime convert to long-acting insulin only, BD in equal doses (OD may suit some people), and on commencing low carbohydrate diet reduce total insulin by 30-50%. Monitor QDS initially for hypoglycaemia (rescue glucose if required). Continue down-titration of insulin as insulin resistance improves (can take months). Goal for most can be to eliminate insulin.

Caution: Some people with T2DM may have significant 'beta cell failure'. Also people with other forms of pancreatic insufficiency (e.g. LADA or T3c) may have been misdiagnosed as T2DM. Consider this if rapidly increasing HbA1c, thirst, polydipsia, weight loss, low C-peptide. Insulin should not be eliminated in this cohort, although basal and bolus dose adjustment needed for carbohydrate restriction.