

MEDICAL PHARMACIES DRUG NEWS

Drug Information and News for Health Care Providers

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ORAL ANTIHYPERGLYCEMIC DRUGS

Oral antihyperglycemic drugs are medications used to lower blood glucose levels for people with type 2 diabetes.

What are the key considerations for choosing oral antihyperglycemic drugs?

Treatment with oral antihyperglycemic drugs should be individualized for each resident based on blood glucose level, other medical conditions, weight, and risk of hypoglycemia. Preventing hypoglycemia, or low blood glucose, is important when treating frail elderly because hypoglycemia can have serious implications in this population.

How do the different types of oral antihyperglycemic drugs compare?

Category	Drug Names (Brand Names)	Risk of Hypoglycemia	Important to Know
Biguanide	<ul style="list-style-type: none"> Metformin (Glucophage®, Glumetza®, generic) 	Negligible	<ul style="list-style-type: none"> Renal dosing required Vitamin B₁₂ deficiency GI side effects
Sulfonylureas	<ul style="list-style-type: none"> Gliclazide (Diamicon®, Diamicon® MR, generic) Glimepiride (Amaryl®) Glyburide Chlorpropamide Tolbutamide 	minimal/moderate moderate significant significant significant	<ul style="list-style-type: none"> Renal dosing required (except tolbutamide) Lower risk of hypoglycemia with gliclazide and glimepiride Hypoglycemia and weight gain are common with glyburide.
SGLT2 inhibitors	<ul style="list-style-type: none"> Canagliflozin (Invokana®) Dapagliflozin (Forxiga®) Empagliflozin (Jardiance™) 	Negligible as monotherapy	<ul style="list-style-type: none"> Renal dosing required Possible weight loss Urinary tract and yeast infections Hypotension and serum potassium changes
Combination drugs	<ul style="list-style-type: none"> SGLT2 inhibitor + Metformin: Invokamet®, Xigduo®, Synjardy™ Considerations for both metformin and SGLT2 inhibitors apply to this category. 		
Alpha-glucosidase inhibitor	<ul style="list-style-type: none"> Acarbose (Glucobay™) 	Negligible as monotherapy	<ul style="list-style-type: none"> Renal dosing required GI side effects
DPP-4 inhibitors	<ul style="list-style-type: none"> Alogliptin (Nesina®) Linagliptin (Trajenta®) Sitagliptin (Januvia®) Saxagliptin (Onglyza®) 	Negligible as monotherapy	<ul style="list-style-type: none"> Renal dosing required (except linagliptin) Caution with use of saxagliptin in heart failure Flu-like symptoms
Combination drugs	<ul style="list-style-type: none"> DPP-4 inhibitor + Metformin: Kazano™, Jentadueto™, Janumet®, Komboglyze® Considerations for both metformin and DPP-4 inhibitors apply to this category. 		
TZDs (Thiazolidinediones)	<ul style="list-style-type: none"> Pioglitazone (Actos) Rosiglitazone (Avandia®) 	Negligible as monotherapy	<ul style="list-style-type: none"> Renal dosing not required Weight gain, edema, congestive heart failure, and fractures
Meglitinide	<ul style="list-style-type: none"> Repaglinide (GlucosNorm®) 	Minimal/moderate	<ul style="list-style-type: none"> Renal dosing not required Less hypoglycemia than sulfonylureas Medication is short-acting and can be held when a meal is missed.

References:

- Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Canadian Diabetes Association 2013 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. Can J Diabetes 2013;37(suppl 1):S1-S212.
- Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Pharmacologic management of type 2 diabetes: 2016 interim update. Can J Diabetes 2016;40:484-486.
- American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American Geriatrics Society 2015 updated Beers criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc 2015;63(11):2227-2246.