

Rifamycins and Anti-Diabetic Agents: Drug-Drug Interactions

General Tuberculosis (TB) Therapy Information

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 Many diabetic medications are metabolized via the Cytochrome P450 (CYP450) enzymatic system in the liver. Rifampin is a potent inducer of the Cytochrome P450 and accounts for many of the drug interactions that occur during TB therapy.

Rifabutin is a weaker inducer of the Cytochrome P450 system, potentially interacting with some of the same medications as Rifampin.

Enzyme induction effects can last 2-4 weeks after discontinuation of rifampin. Glucose levels should be monitored and diabetic medications should be readjusted at the end of treatment.

BIGUANIDE (METFORMIN) BASED				
BRAND	GENERIC	CLINICAL EFFECT	RIFAMPIN (RIF) DRUG-DRUG INTERACTIONS	RECOMMENDATIONS
Glucophage®	Metformin	↓Production of glucose by the liver ↓Absorption of glucose by intestines ↑Insulin sensitivity	None noted	No contraindications
Glucovance®	Glyburide+ Metformin	Glyburide: ↑Secretion of insulin from the pancreas Metformin: ↓Production of glucose by the liver ↓Absorption of glucose by intestines ↑Insulin sensitivity	↓Glyburide levels 39% Metformin: None noted	•Consider glipizide as first choice sulfonylurea to minimize interactions •Increase monitoring •Consider dose adjustment of antidiabetic agents or alternative glucose control therapy. Metformin: •No contraindications
Metaglip®	Glipizide+ Metformin	Glipizide: ↑Secretion of insulin from the pancreas Metformin: ↓Production of glucose by the liver ↓Absorption of glucose by intestines ↑Insulin sensitivity	↓Glipizide levels 22% Metformin: None noted	
Janumet®	Sitagliptin+ Metformin	Sitagliptin: ↑Secretion of insulin from the pancreas • delays gastric emptying ↓Appetite ↓Glucagon release after meals Metformin: ↓Production of glucose by the liver ↓Absorption of glucose by intestines ↑Insulin sensitivity	May ↓ sitagliptin levels Metformin: None noted	Sitagliptin: • Increase monitoring; interaction may be minimal and require no adjustments Metformin: •No contraindications
SULFONYLUREA BASED				
Micronase®	Glyburide	↑Secretion of insulin from the pancreas	↓Glyburide levels 39%	•Consider glipizide as first choice sulfonylurea to minimize interactions •Increase monitoring •Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
Amaryl®	Glimepiride	↑Secretion of insulin from the pancreas	↓Glimepiride levels 30%	
Glucotrol®	Glipizide	↑Secretion of insulin from the pancreas	↓Glipizide levels 22%	
Glucovance®	Glyburide + Metformin	Glyburide: ↑Secretion of insulin from the pancreas Metformin: ↓Production of glucose by the liver ↓Absorption of glucose by intestines ↑Insulin sensitivity	↓Glyburide levels 39% Metformin: None noted	•Consider glipizide as first choice sulfonylurea to minimize interactions •Increase monitoring •Consider dose adjustment of antidiabetic agents or alternative glucose control therapy. Metformin: •No contraindications
Metaglip®	Glipizide+ Metformin	↑Secretion of insulin from the pancreas Metformin: ↓Production of glucose by the liver ↓Absorption of glucose by intestines ↑Insulin sensitivity	↓Glipizide levels 22% Metformin: None noted	•No contraindications
Avandaryl®	Pioglitazone + Glimepiride	Pioglitazone: ↑Insulin sensitivity (body and liver cells) Glimepiride: ↑Secretion of insulin from the pancreas	↓Pioglitazone levels 54% ↓Glimepiride levels 30%	Pioglitazone: •Increase monitoring •Consider dose adjustment of antidiabetic agents or alternative glucose control therapy. •Consider glipizide as first choice sulfonylurea to minimize interaction Metformin: •No contraindications
Duetact®	Rosiglitazone + Glimepiride	Rosiglitazone: ↑Insulin sensitivity (body and liver cells) ↓Production of glucose by the liver ↑Cell uptake of glucose Glimepiride: ↑Secretion of insulin from the pancreas	↓Rosiglitazone levels 54-65% ↓Glimepiride levels 30%	Rosiglitazone: •Increase monitoring •Consider dose adjustment of antidiabetic agents or alternative glucose control therapy. •Consider glipizide as first choice sulfonylurea to minimize interaction Metformin: •No contraindications

Rifamycins and Anti-Diabetic Agents: Drug-Drug Interactions continued

MEGLITINIDE ANALOGUE				
BRAND	GENERIC	CLINICAL EFFECT	RIFAMPIN (RIF) DRUG-DRUG INTERACTIONS	RECOMMENDATIONS
Prandin®	Repaglinide	↑ Secretion of insulin from the pancreas	↓ Repaglinide levels 31-57%	<ul style="list-style-type: none"> • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
Starlix®	Nateglinide	↑ Secretion of insulin from the pancreas	↓ Nateglinide levels 24%	<ul style="list-style-type: none"> • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
THIAZOLIDINEDIONE (PPAR γ-AGONIST)				
Avandia®	Rosiglitazone	<ul style="list-style-type: none"> ↑ Insulin sensitivity (body and liver cells) ↓ Production of glucose by the liver ↑ Cell uptake of glucose 	↓ Rosiglitazone levels 54-65%	<ul style="list-style-type: none"> • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
Actos®	Pioglitazone	<ul style="list-style-type: none"> ↑ Insulin sensitivity (body and liver cells) ↓ Production of glucose by the liver ↑ Cell uptake of glucose 	↓ Pioglitazone levels 54%	<ul style="list-style-type: none"> • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
Duetact®	Rosiglitazone + Glimepiride	Rosiglitazone: <ul style="list-style-type: none"> ↑ Insulin sensitivity (body and liver cells) ↓ Production of glucose by the liver ↑ Cell uptake of glucose Glimepiride: <ul style="list-style-type: none"> ↑ Secretion of insulin from the pancreas 	↓ Rosiglitazone levels 54-65% ↓ Glimepiride levels 30%	<ul style="list-style-type: none"> • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy. • Consider glipizide as first choice sulfonylurea to minimize interaction • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
Avandaryl®	Pioglitazone + Glimepiride	Pioglitazone: <ul style="list-style-type: none"> ↑ Insulin sensitivity (body and liver cells) Glimepiride: <ul style="list-style-type: none"> ↓ Secretion of insulin from pancreas 	↓ Pioglitazone levels 54% ↓ Glimepiride levels 30%	<ul style="list-style-type: none"> • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy. • Consider glipizide as first choice sulfonylurea to minimize interaction • Increase monitoring • Consider dose adjustment of antidiabetic agents or alternative glucose control therapy.
α-GLUCOSIDASE INHIBITOR				
Precose®	Acarbose	↓ Digestion and absorption of glucose by the intestines	None noted	No contraindications
Glyset®	Miglitol	↓ Digestion and absorption of glucose by the intestines	None noted	No contraindications
INCRETIN MIMETIC (GLP-1 RECEPTOR AGONIST)				
Byetta®	Exenatide	↑ Secretion of insulin from the pancreas <ul style="list-style-type: none"> • delays gastric emptying ↓ Appetite ↓ Glucagon release after meals	None noted	No contraindications
DIPEPTIDYL PEPTIDASE IV INHIBITOR				
Januvia®	Sitagliptin	↑ Secretion of insulin from the pancreas <ul style="list-style-type: none"> • delays gastric emptying ↓ Appetite ↓ Glucagon release after meals	May ↓ sitagliptin levels	Increase monitoring; interaction may be minimal and require no adjustments
Onglyza®	Saxagliptin	↑ Secretion of insulin from the pancreas <ul style="list-style-type: none"> • delays gastric emptying ↓ Appetite ↓ Glucagon release after meals	May ↓ saxagliptin levels	Increase monitoring; interaction may be minimal and require no adjustments
Janumet®	Sitagliptin + Metformin	Sitagliptin: <ul style="list-style-type: none"> ↑ Secretion of insulin from the pancreas <ul style="list-style-type: none"> • delays gastric emptying ↓ Appetite ↓ Glucagon release after meals Metformin: <ul style="list-style-type: none"> ↓ Production of glucose by the liver ↓ Absorption of glucose by intestines ↑ Insulin sensitivity 	May ↓ sitagliptin levels Metformin: None noted	Sitagliptin: <ul style="list-style-type: none"> • Increase monitoring; interaction may be minimal and require no adjustments Metformin: <ul style="list-style-type: none"> • No contraindications
AMYLINOMIMETIC				
Symlin®	Pramlintide	Delays gastric emptying ↓ Appetite ↓ Glucagon release after meals	None noted	No contraindications

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